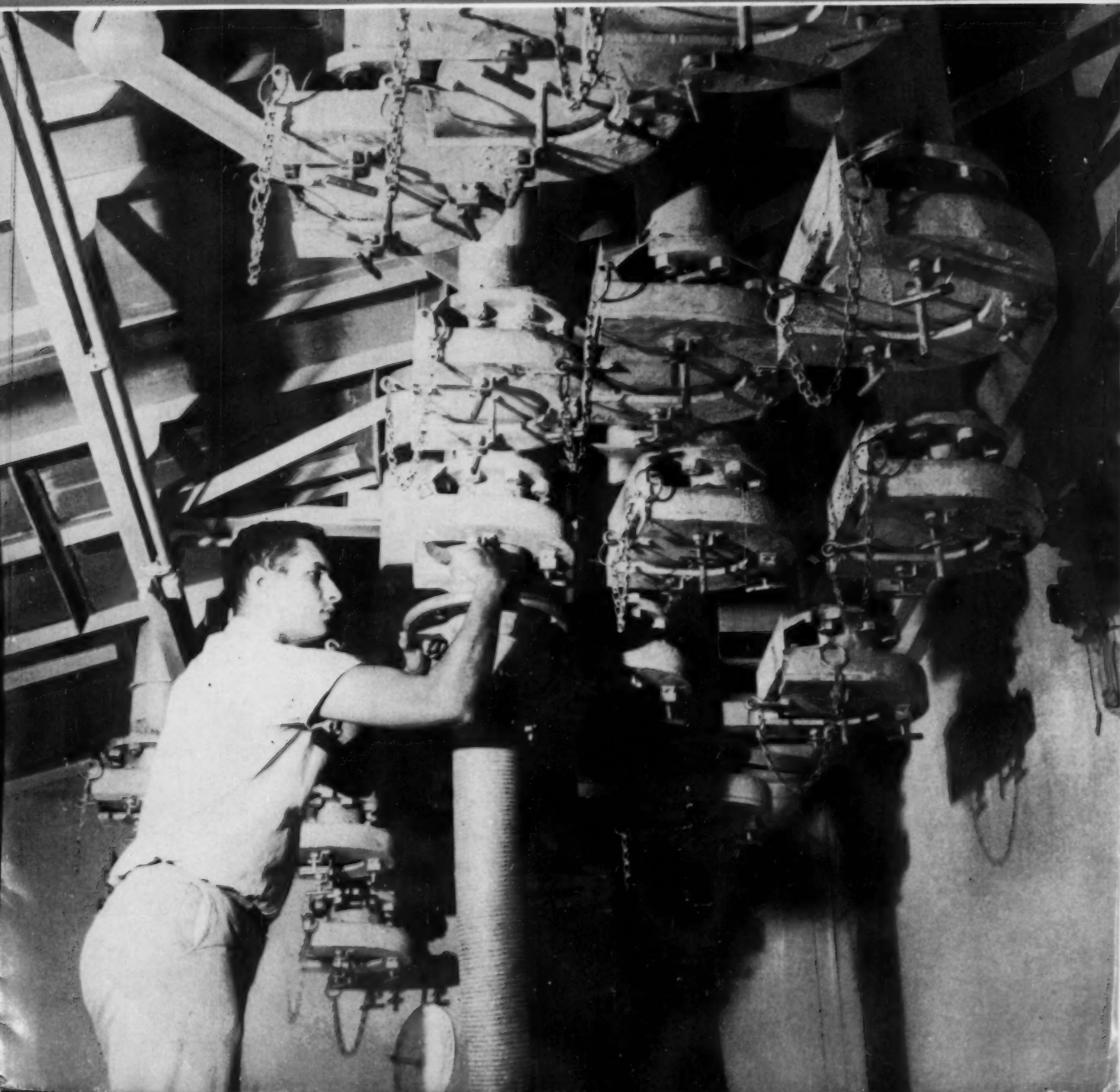


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JULY 1959



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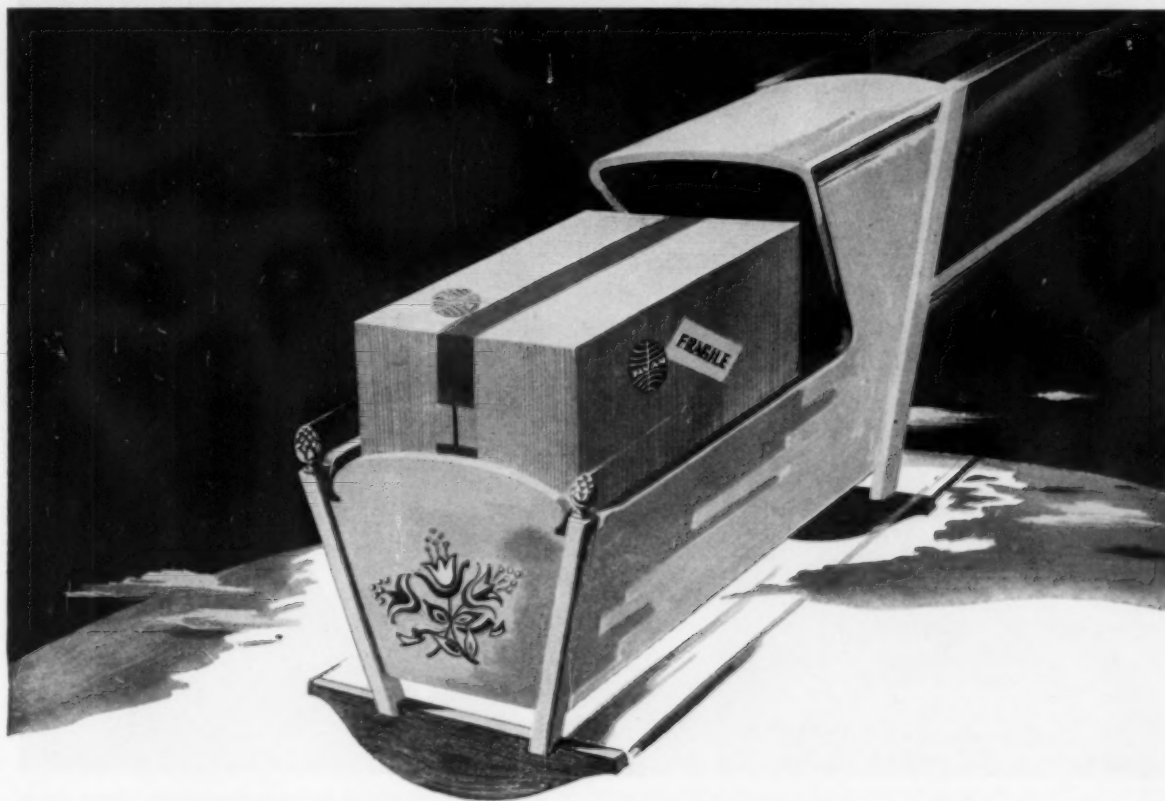


*"Walkie" type Moto-Trucs are also available in these same basic models.

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Circle No. 1 on Card, Facing Page 55, for more information

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JULY 1959



R. W. Anderson poses with the Operating Vice-President's Safety Award

*Does safety contribute
to better freight service?*

On the Rock Island, Yes

to quote R. W. Anderson, Arkansas Division Superintendent

It is a known fact in railroading that there is a definite corollary between safety and performance. The better the safety, the better the performance.

"For one thing," says Mr. Anderson, "a good company safety record attracts better personnel. And better personnel means a smoother operation. For another, we've found that when our people are conscious of *their own* safety, it rubs off on everything they do—including the safe and efficient handling of freight.

"On the Arkansas division—just as on every division—we put tremendous stress on safety. As a matter of fact, this division has won the Vice-President's Safety Award two of the last four years. We have found awards to be an excellent means of stimulating system-wide interest in safety. Rock Island operating personnel, moreover, are required to take regular examinations on operating rules,

which, by and large, are based on common-sense safety rules. In addition, each district has a safety officer, who carries the programs of the Superintendent of Safety to the divisional level.

"You can't take safety for granted. People's instinct for self preservation isn't strong enough. You have to stress it continually. Safety campaigning on the Rock Island, just as in our customers' companies, is an endless job."

Has the Rock Island's emphasis on safety paid off?

"Our safety performance has consistently improved year after year," says Mr. Anderson. "And this is as it should be. For we have an obligation not only to our people to make their jobs safe, but to our customers to deliver their freight safely—and on time. The two go hand in hand, and we're proud that our record in both is one of continuous improvement."

If you have any comments, pro or con, regarding our rates or services, we invite you to discuss them with your Rock Island traffic representative.



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...geared to the nation's future*

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JULY 1959

DA

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JULY 1959

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CHUTING THE



REA Reorganization Plan Fails To Receive Approval of Owners

The reorganization plan recommended for Railway Express Agency by its Board of Directors has failed to gain the unanimous support of the agency's owners.

William B. Johnson, president of REA, in a statement on the failure of the 178 railroads to agree, explained the Board's action on several other programs. The question of the purchase of the business by outside interests—Lehman Brothers, United States Freight Co., and others—was considered by the Board. It was not referred to the individual railroads because there were negative votes.

A new plan proposed by the company's management will be acted upon by the railroads early in July.

Santini to Head New Group Of New York Export Packers

Martin L. Santini, vice president of Santini Brothers, Inc., recently was elected president of the Export Packers Association of New York, Inc.

Other officers of the newly formed organization are Murray Lehman, Export Packing and Crating Co., Inc., vice president; Ralph King, Safeway Export Packing Co., treasurer; and Sol Shiock, State Cooperage Co., secretary.

The directors are Ben Eicoff, Metro Export Packers; Morris Smolkin, Franklin Repacking Corp.; Marvin Ratner, Rentar Packaging Co., Inc. and Stanley Hatcher, Hatcher's Export Packing Co., Inc.

ATA Freight Claim Council Discusses Ways To Prevent \$16.5 Million in Loss, Damage

More than 175 trucking freight claim experts from the U. S. and Canada met recently in Detroit in an effort to reduce the \$16.5 million annual loss and damage figure.

It was the 22nd Annual Membership Meeting of the National Freight Claim Council of the American Trucking Associations, Inc. Professor Mart I. Fowler, director of industrial research, Purdue University, was a guest speaker.

He said that the claim agent profession is currently "crossing a major frontier between the trial and error of claim agent knowledge and techniques and planning."

"The claim agent is a fact-finding industrial technician, who analyzes and surrounds all of his employer's or client's problems having to do with the preparation, the storage, the shipment, and re-shipment to the consumer's point of use," the speaker said.

G. G. Weinstock, director of insurance and claims of Yale Transport Corp., spoke on the rapid development of closed circuit television in the trucking industry.

J. Robert Cooper, president of the ATA, reported on claims progress to date. The trucking industry has reduced freight claims by 38 per cent since 1946, he said.

Sales of wirebound containers for April 1959 were 28.4 per cent greater than they were in April 1958, L. S. Beale, secretary, reported at the recent meeting of the Wirebound Box Mfrs. Assn. For the first four months of this year, Beale said, sales ran 13 per cent ahead of 1958.

TOC Presents Annual Awards



J. Robert Cooper (second from left), president of the American Trucking Associations, Inc., presented an Achievement Award to Saul Burten, past-chairman of The Operations Council, at the TOC's 11th Annual Meeting. Certificates of Merit were presented to Dave Pagett (second from right), vice president-operations, Yellow Transit Freight Lines, Inc., and John Bergstrom (right), general manager, Trans-Continental Div., Consolidated Freightways

The trucking industry registered a gain of 15.6 per cent in intercity tonnage during the first quarter of 1959 as compared with the same period a year ago. The ATA reports the index for 1959 reached an all-time high of 206—17 points above the previous first quarter high set in 1957.

(Please Turn Page)

Chuting the News . . .

(Continued from Preceding Page)

Rail Official Asks for Aid In Averting Car Shortage

A railroad official called on Congress recently asking that tax law adjustments be made to help avert a possible freight car shortage.

Harry J. Breithaupt, Jr., general attorney of the Association of American Railroads, said the carriers' diminishing supply of cars "is due to one fundamental cause—the lack of money."

Testifying before the Subcommittee on Freight Car Shortage of the Senate Committee on Interstate and Foreign Commerce, he suggested two changes.

The income tax law should be amended, Breithaupt said, to give railroads a more realistic write-off period for new investment. The second bill would let railroads set up construction reserve funds on which taxes would be deferred if the funds were spent within five years for new facilities.

—DA—

A rehearing opened recently before the ICC on the question of whether the Sealdtank container is a package which a general commodity carrier may haul. An earlier ruling stated that the tank converted the truck to a tank vehicle.

—DA—

Brown to Direct Progress Program of Regular Carriers

Charles D. Brown, of Arlington, Va., has been named director of the Program for Progress of the Regular Common Carrier Conference, American Trucking Association, Inc.

The appointment was announced by Albert B. Rosenbaum, executive director, following the recent meeting of the Conference Board of Governors. Brown joined the Conference in 1953 and has been active in all of its programs.

NDT Fair at Monterey

The Monterey Chapter of the National Defense Transportation Association recently sponsored a Transportation Fair. It consisted of a seminar, a parade, exhibits, a banquet, and a ball.

—DA—

Several States Change Motor Vehicle Equipment

Changes in motor vehicle equipment requirements have been enacted in several states this year, according to a survey by the National Highway Users Conference.

Arkansas and Kansas have approved bills to amend lighting and reflector requirements. The Kansas bill requires amber turn signals, the color recommended by the Uniform Vehicle Code.

Laws to legalize amber parking lamps have been enacted in Iowa, Minnesota, Oregon, Texas, and Virginia.

A new law in New York requires drivers to dim headlights 200 ft before overtaking a vehicle traveling in the same direction. Washington makes electric turn signals mandatory on vehicles manufactured after Jan. 1, 1960.

In California a bill has been introduced to prohibit registration unless a vehicle owner complies with anti-pollution exhaust and muffler requirements. An Arkansas law bans muffler cutouts and a Maine law prohibits excessive noise. Connecticut also has enacted new muffler regulations.

Maine has extended mudflap requirement to vehicles weighing 6000 lb registered gross weight or more. A Vermont law requires splashguards on any truck or combination with at least four tires on the rear axle.

The U. S. Supreme Court has invalidated the Illinois contour splashguard law as an unreasonable burden to interstate commerce.

MH Presidents Meet



Eugene Caldwell (left), president of The Material Handling Institute, Inc., greeting C. C. Haddrell, president, the MH Equipment Distributors Assn., before Haddrell spoke at MHI luncheon

Lindsay Executive Director Of Local Cartage Conference

James R. Lindsay, of Niagara Falls, N. Y., has been appointed executive director of the Local Cartage National Conference.

At the same time, the LCNC announced the appointment of William E. Patterson as assistant executive director. Barbara Jean Hood, who has been with the staff for a year, is the administrative assistant.

The new executive director is an attorney. He received his Bachelor of Arts degree at Niagara University and a Bachelor of Law degree from the University of Buffalo.

—DA—

Club

The Eastern Division of the Society of Industrial Packaging and Materials Handling Engineers recently held a Ladies Night. Members' wives enjoyed a gourmet dinner, luxurious corsages, gifts, and door prizes.

The Delaware Valley Chapter, AMHS had a stag golf outing and dinner recently.

Free beer was the order of the day at a recent Delta Nu Alpha, Chapter 20, Indianapolis, Ind., meeting at Morgan's Restaurant.

A golf outing was enjoyed recently by members of the Traffic Club of Syracuse, N. Y.

New Officers of the AMHS



New officers of the American Materials Handling Society are (left to right) Stephen C. Traudt, president; Neil A. Bryson, first vice president; Elton F. Reid, Jr., second vice president; Charles L. McCamey, treasurer; and Thomas J. White, secretary. The group held its 10th Anniversary Banquet recently in Cleveland

Trucking Industry Program To Stress Year-Round Safety

A new trucking industry safety program will stress a different aspect of safety each month of the year.

Goley D. Sontheimer, director of safety of the American Trucking Associations, Inc., has announced an October opening for the campaign, which will be supported by 39 state associations. Sontheimer said the program is designed "primarily to provide smaller trucking companies with an easily-implemented, effective safety program at no cost to them, and to supplement the programs of larger firms."

—DA—

Briefs

The Traffic Club of New York has moved into new quarters in the Grand Central Terminal Building. The rooms are completely air conditioned and include lounge, dining rooms, men's grill, and bar.

The Traffic Club of Denver had a golf outing recently at the Columbine Country Club.

The San Fernando Valley Traffic Club elected officers and directors at a recent meeting. Officers are: Amos J. Brown, president; Thomas Becker, secretary; W. H. Larrabee, treasurer; and Roy Crum, Chairman of the Board.

Truckers Exhibit at Fair

Service is the keynote of exhibits by trucking companies and freight forwarders at the 1959 Chicago International Trade Fair. Held in celebration of the opening of the St. Lawrence Seaway, the fair runs through July 18 at the Navy Pier. Among the truck lines and forwarders taking part are Interstate Motor Lines, Inc., Pacific Intermountain Express, and Inland Forwarding Co., Inc.

—DA—

Pacific Intermountain Express Co. has acquired a four-company group including freight forwarding and local cartage. Companies involved in the transaction are Pacific and Atlantic Shippers, Inc.; Panda Terminals of Illinois, Inc.; Panda Terminals of California, Inc.; and B. C. Forwarding Co., Ltd., Vancouver, B. C.

Bruce Motor Freight, Inc., Des Moines, Iowa, is constructing a \$400,000 terminal building in Roseville, Minn., at 2280 Hampden Ave.

Japan Air Lines has established a weekly all-cargo flight linking San Francisco and Tokyo. Weekly schedule: leave San Francisco at 5 p.m. Saturdays; leave Honolulu at 3 p.m. Sundays; arrive Tokyo at 5:35 p.m. Mondays. Eastbound flights will depart Tokyo at 8 p.m. Thursdays to reach San Francisco at 4:35 p.m. Fridays. Times are local.

Legislative Line-Up

Following is a brief summary of legislative items pending in Washington. The status reported is as of June 25.

AIRPORT CONSTRUCTION—Enactment of an amended version of S. 1 was anticipated in June. The Congress scaled down its bill to provide two years of federal aid to airport construction at an annual amount of \$63 million.

DUAL RATES—Consideration was given by the House Merchant Marine Committee to continuation of public hearings, in Washington, on steamship conference rates.

HIGHWAYS—A financing plan to accompany H. R. 5950 was awaited by the House Public Works Committee. This bill would continue federal aid to road-building at approximately the rate set in 1956. The Ways and Means Committee is expected to provide the financing plan.

LABOR—Debate on labor union reform legislation continued in the House Labor Committee. Then committee had before it the Senate bill, S. 1555, and other legislation. Some hope for approval of a stronger bill than S. 1555 was seen late in June.

RAIL CAR RENTAL—One bill, S. 1789, designed to improve the freight car supply and boost freight car use was ordered reported by the Senate Commerce Committee. The measure would allow ICC to establish incentive per diem rates.

TAX REFORM—No action is scheduled now by the House Ways and Means Committee on H. R. 3000 and 3001. These bills would change the tax laws, thus aiding businessmen.

—DA—

News Briefs

Establishment of a Department of Merchandise Services, headed by George R. Johnston as general manager, is announced by Canadian National Railways.

Ryder System, Inc., has contracted to purchase three firms, in different degrees. They are York Transport Companies, Houston, Texas; the car and truck rental-leasing fleets and other assets of Dixie Drive It Yourself System, Birmingham, Ala.; and the Indiana Truckleasing Corp., Fort Wayne, Ind.

Paul F. Yount, executive vice president-staff of Consolidated Freightways, Inc., Menlo Park, Calif., recently predicted that advances in the use of containers would in time allow shipments of goods to go anywhere on a single bill of lading, moving by the most advantageous combination of land, sea, or air facilities.

POWERFUL *L-S Drive Units*

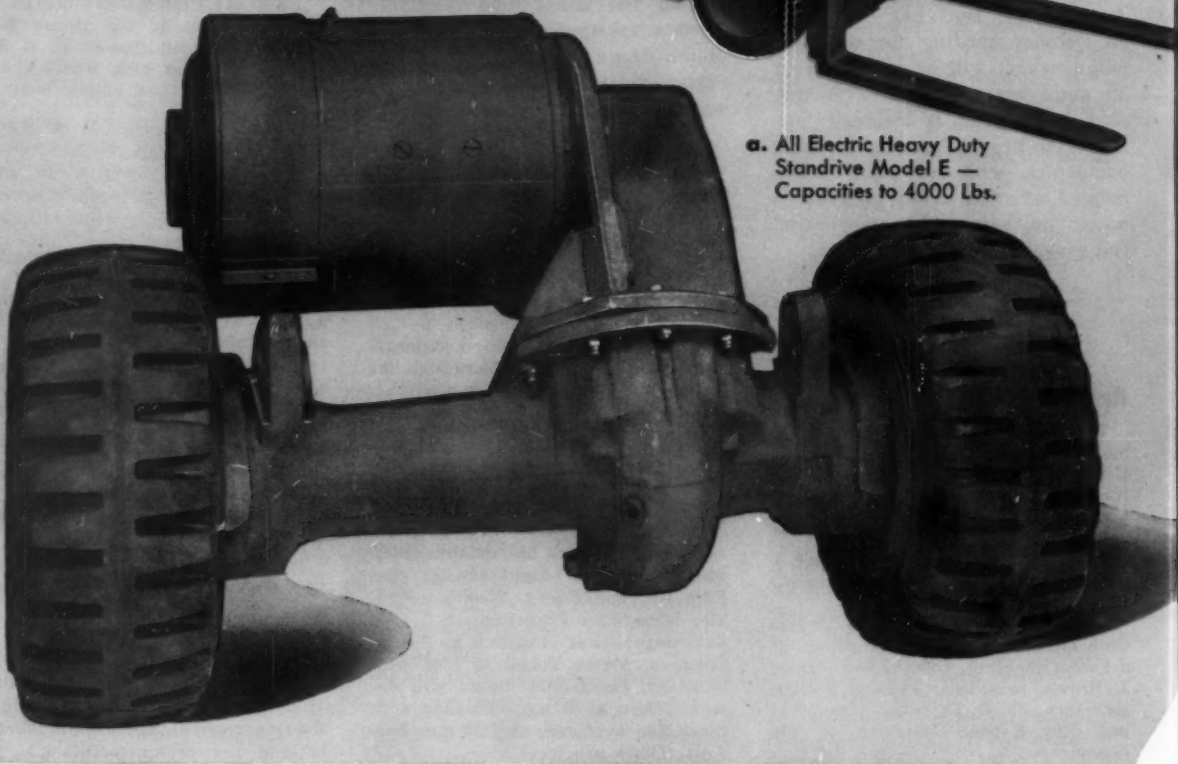
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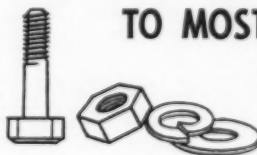
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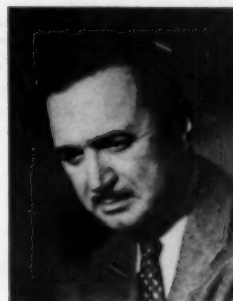
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IN THE SOUTH



On the Line—



An "Odd-Ball" Problem

A certain TM we know is not happy with one of his best staff men. This fellow is bright, college trained, energetic, thorough, reliable; in short, a good and fast worker. But some bright people are "odd-balls." This is one.

He is about the most extraverted and uninhibited fellow we've ever met. A hep cat's hep cat. Up in orbit yet, with a real gone beep, beep, beepitty beep.

His dress is most casual: Gay sport shirts, baggy trousers, loud socks, suede shoes.

He is quite witty. When we were introduced, he said, "I admire the fourth estate but make mine a fifth—sour mash bourbon."

His language is "off beat." In fact, he invented a new traffic vocabulary. When he says "That's for the birds," it means "Ship via air freight." "Roll it wide gauge" means "Ship via railroad." (Or he may say "Roll it Oop," which means "Ship via Union Pacific.")

When he says "Bills screened," you know that the freight bills have been audited. "Scoop the boxes" means "Unload the trailers." A barge is a "surfboard," and a warehouse is a "coop." A pickup truck is a "bitty box," and a Carrier's tariff is a "tip sheet."

He calls the TM "our leader," and always gives him a mock salute. (Later, as we were leaving, we couldn't resist looking in his direction. He was on the 'phone, feet on the fly leaf of his desk. As a young lady walked by, he handed her a paper and made the salute. She acknowledged with a smile and took the paper into the TM's office.)

"I know he means to be funny, not insulting," said the TM. "But the darn fool has no control. He'll do it in the presence of strangers and top management, as well as the staff."

"How would you handle a guy like that?"

Right off, we said we would spell out office rules, business etiquette . . . He stopped us.

"I went over that several times; talked to him like a dutch uncle. I even talked to his wife, but she's a real cool jitterbug, too."

"I don't want to fire the guy. He's better than any two others I've got. For a while, I

decided to live with him, like with my mother-in-law. But even she doesn't embarrass me the way this guy does. Oh, well . . . Sorry that I burdened you."

Readers, how would you handle this problem?

Out of The Mouth Of Babes...

It was so hot and sticky in the Philadelphia subway that everybody was limp and listless. At the 34th and 30th St. stops, groups of chattering college kids swarmed in and choked off the last bit of air.

As we struggled to breathe, we tried to console ourselves with the thought that school vacations were about to begin. We closed our eyes and mentally pictured a tall, frosty, life-saving drink we would pick up as soon as we would get off.

In the meantime, out of the babel a girl's voice filtered into our consciousness: "Those foreign politicians make fools of ours. When they want money, goods, or political support, they hint that the Russians are winning over their people with great gobs of gifts. They know that this will create a crisis in Washington."

"Sure enough, in about the time it takes to count it, our foreign aid experts scoop up a million or two into the next plane and drop it into the foreign politician's lap. Those smooth-nicks accept our money and goods as payment for their friendship. If we stop paying, they accuse us of not wanting their friendship."

"If we are not their friends, then we must be their enemies. They hate their enemies so they will hate us. All because we put foreign governments on our relief rolls—instead of helping their people to help themselves in the vital fields of farming, housing, health, education and industry."

"How naive can our politicians be?"

About this time we had to elbow our way out of the subway train. We forgot our discomfort. We forgot our drink. We thought only that the future of this country would be in good hands.

Herb Greene

EDITOR

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 with More Power — full 35 hp, most available in trucks this size.

NEW... FTB30-15, 3,000-lb, cushion tires
 with More Traction, Balance, as well as power, to climb
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 with Bonus Strength where it counts — and
 unequaled, timesaving serviceability.

...and now the



NEWEST LIFT TRUCK IN THE 2,000—3,000-LB CLASS

FTB30-24, 3,000-lb, cushion tires
 with More Operating Advantages — has
 outside turning radius of only 67 in. — a real
 space-saver! It's outstanding for operator
 comfort and convenience — safety, too. Avail-
 able with either POWER-SHIFT torque
 converter drive or standard transmission.

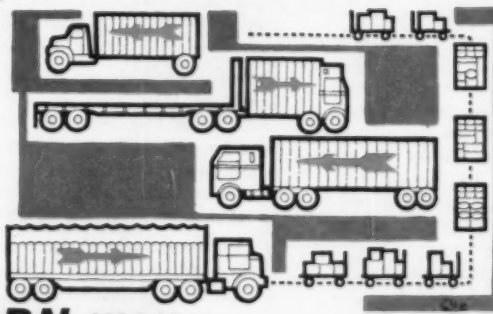
See your Allis-Chalmers material handling
 dealer for more information — or write direct.
 Allis-Chalmers, Milwaukee 1, Wisconsin.

BH-116

ALLIS-CHALMERS



Stay Ahead — Always Ship... **RINGSBY ROCKET**



THE MODERN WAY...

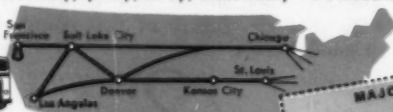
The most modern line-haul equipment on wheels travels over the 9000-mile Ringsby System. New, custom-designed 40-foot high-cube vans... versatile open top and flat bed trailers... non-stop sleeper tractors assure the fastest transportation for your freight. Shipments flow smoothly at both ends of the haul with Ringsby. Pickup and delivery is speeded by two-way radio — terminal freight handling is streamlined with automatic Towveyor equipment. Ship RINGSBY ROCKET... your freight moves constantly, quickly, safely, economically — the modern way!



RINGSBY

TRUCK LINES, INC.
 GENERAL OFFICES DENVER, COLO.

LINE OF THE ROCKETS



MAJOR TERMINALS	
Chicago	Udell 5-7380
St. Louis	Central 1-3751
Kansas City	Hilsholtz 2-9359
Cheyenne	2-9331
Denver	A-Cone 2-5781
Salt Lake City	Honey 4-4481
Las Vegas	Dudley 2-4736
San Francisco	AXbrook 2-1055
Oakland	Olympic 4-1274
Los Angeles	Angelo 3-5193

LETTERS TO THE EDITOR

Spotting Marked Cars

To The Editor:

We are particularly interested in carrier's liability in properly placing cars for unloading when placarded "Unload from this side or unload from other side." We recently received five cars with such placards applied and the railroad placed cars opposite without inquiring, resulting in additional cost to us. We have a private siding and the railroad serving us does all of our switching.

They have no ruling as to liability. However, we feel their local representative should be notified by their nearest terminal who in turn should ascertain from the consignee how they wish cars to arrive.

Will you please advise if the railroad is responsible.

I. J. Schmeltz
 Traffic Manager

River Raisin Paper Co.,
 Monroe, Mich.

The subject of contract law is involved. It is certain, for instance, that the railroad company would not be liable unless you have in the past relied upon some valid ruling, or due to past experiences and services the higher court may hold that the company impliedly agreed to properly place the cars, or there exists an expressed agreement, based upon valid consideration, under which the company contracted with you to properly place the cars.

Take, as an example a later and leading higher court case (298 Pac. 371) which involved theft of goods from a spotted car. The car had been properly spotted and the consignee had taken possession of same. But before it was fully unloaded night came and the agent of the railway company told the consignee that he would have to complete the unloading the following day. Then the agent placed a seal on the car. That night the theft occurred. After a great deal of testimony the higher court held the company liable because by its agent placing the seal on the car, the company had taken legal possession of the car although it may have been spotted on tracks owned by the consignee.

It may be assumed that if the company has in the past placed all cars in due respect to the notifications on placards, the company may be held to have impliedly agreed to follow the same procedure. But assume that the company has in the past disregarded such notifications, and there is no lawful and existing requirement that it properly place the cars, it is doubtful that a court will hold the company liable. Leo T. Parker, DA Legal Consultant.

Traffic Conference

To The Editor:

An article appeared on page 9 of the November, 1958 issue of *DISTRIBUTION AGE* referring to National Small Shippers Traffic Conference.

Issue referred to has been mislaid and I am asking if you will kindly let me have the name of the traffic manager of this group and also the address of this gentleman so that a communication could be addressed to him.

L. M. MacPherson
Traffic Consultant

American Seating Co.,
Grand Rapids, Mich.

The National Small Shipments Traffic Conference, Inc., is located at Suite 801 Mills Building, Washington 6, D. C. Mr. Harry F. Gillis is executive vice president of the Conference.
—The Editor.

Shipping Cooperatives

To The Editor:

I enjoyed very much the article by Mr. David M. Daly, "Where Do You Stand on Plan III?" which appears in your January issue.

In this article, Mr. Daly mentions shipping cooperatives. Is it possible for you to give me more information on these cooperatives or direct me to the proper source?

E. K. Schnitkey
Traffic Manager

La Choy Food Products,
Archbold, Ohio

We do not have an all-inclusive list of shippers' cooperatives. However, you are probably aware that shippers' cooperatives do not come into being by themselves, but are created by traffic men in an effort to hold down shipping costs. It may well be that there is enough interest in your area to initiate a cooperative to main volume points in the East or West.
—The Author.

Air Freight Terminal Opens



Delta Air Lines recently opened a new air freight terminal at the Atlanta Airport. The 5000 sq ft structure is of masonry and steel. Doors are electrically operated. A depressed ramp approach to the truck dock permits truck-level loading on one side of the building and ground-level flooring on the plane side

Circle No. 4 on Card, Facing Page 55, for more information

EQUALLY ESSENTIAL

for Reliable Protection

against

FIRE, BURGLARY and OTHER HAZARDS

**ELECTRIC
PROTECTION SYSTEMS**

scientifically engineered
skillfully manufactured
expertly installed

**REGULAR
INSPECTIONS, TESTS**

and complete maintenance
by specially trained
technicians

and you get all with **ADT**



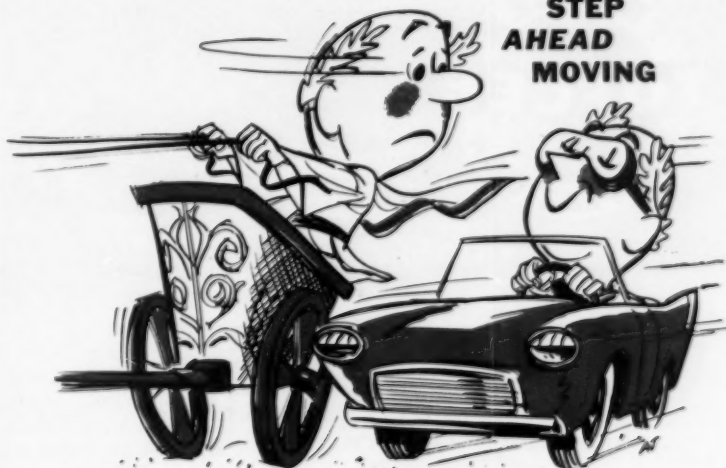
- Central Station Services in principal cities and surrounding areas.
- Elsewhere, ADT-Maintained Systems, direct-connected to fire and police headquarters.

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TO 22 STATES
AND THE DISTRICT
OF COLUMBIA



Trailer freight gets a *real lift* with B&O TOFCEE service. Dispatch is quick, schedules are speedy, delivery is prompt, and reporting on trailers in transit is dependable. Route your next trailer via B&O TOFCEE.

Ask our man!

GEORGE E. DOVE, Manager Railroad Trailer Service,
Baltimore 1, Md., Phone LEExington 9-0400.



BALTIMORE & OHIO RAILROAD

Constantly doing things—better!

Yakkety Yak

By Ye Editor

★ We said, in the editorial, that the odd-ball was witty. Here are three samples:

... "Glasses have an amazing effect on vision—especially after they have been refilled several times."

... "God made woman *after* man because He didn't want any advice."

... "Nothing improves the flavor of salt like a nice, big, thick, juicy steak."

FREE CHART: Delta Air Lines prepared a handy four-color "Air Cargo Service Selection Chart." It's worth having.

... It's a quick reference indicator as to the most economical door-to-door air shipping service. It shows weights from one to 70 lbs, with distances up to 2400 miles.

... It helps you decide whether to ship by air parcel post, air express, or air freight. Write Delta at Atlanta Airport, Atlanta, Ga.

PHONE CODES: You can get a handy chart of the new long distance telephone direct dialing codes by writing to Ohio Seamless Tube Division of Copperweld Steel Co. at Shelby, Ohio.

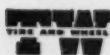
SALES: If you want to do business, or more business, with the U. S. Government, write to Small Business Administration, Washington 25, D. C. and ask for "ABC of Selling to U. S. Government."

... The TM told us that his secretary tossed this one at the odd-ball: "Will you please go out and have yourself X-rayed? I'd like to know what people see in you."

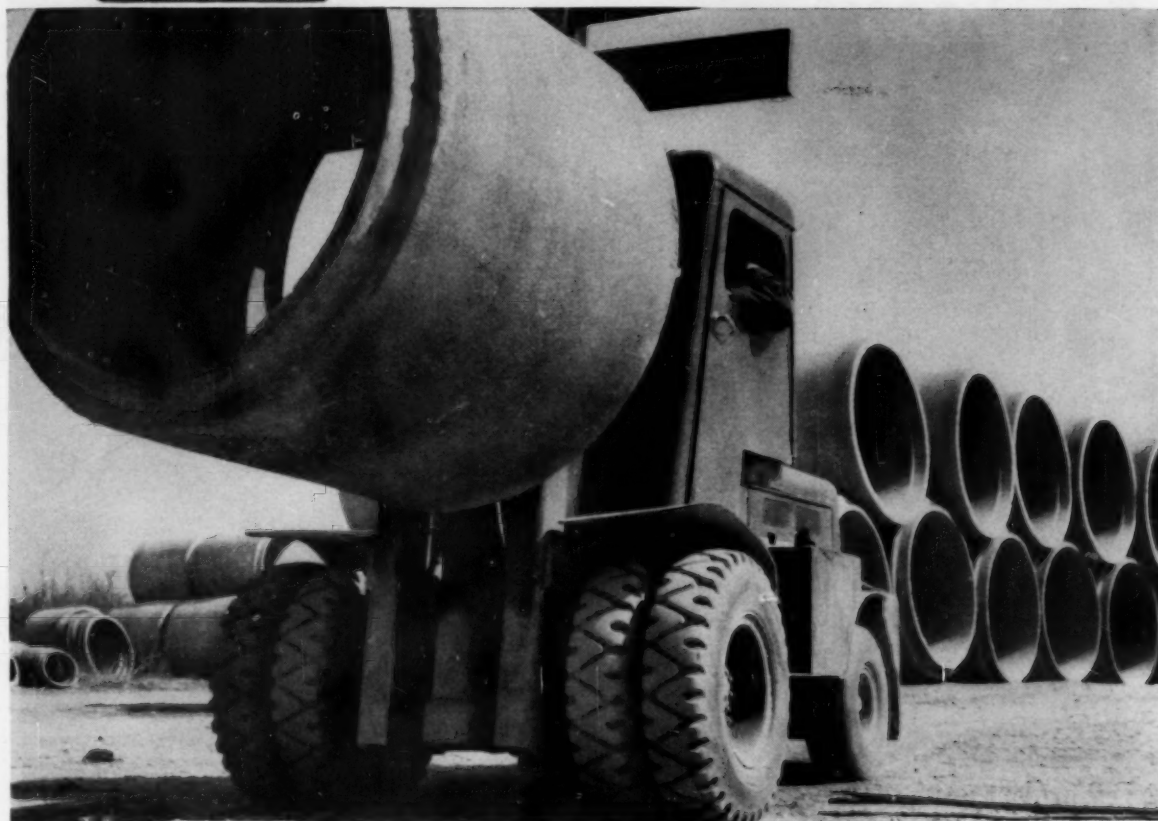
COMPETITORS: Truck Freight Salesman to Rail Freight Salesman: "Didn't I last see you in a bottle of alcohol?"

REMEMBER: A smile increases your face value.

B.F. Goodrich



Analysis Man reports...



B.F. Goodrich "Wired" tires give 5 times the service of other makes, still going strong!

Problem: Lift truck tires used at Toledo Concrete Pipe Co. blew out 2 and 3 times a month, lasted only 6 months. The trouble was caused by scraps of wire reinforcing rods used in pipe construction. Tire and maintenance costs skyrocketed.

Solution: The B.F. Goodrich Tire and Wheel Analysis Man studied the company's complete materials handling setup—then recommended tires designed for this type of work: new B.F. Goodrich "Wired" tires. A special shield of steel wire mesh under the tread protects the tire body from punctures and blowouts.

Results: "B.F. Goodrich 'Wired' tires have been in use 2½ years and to date there have been no repairs," writes Plant Supt. Raymond L. Edwards. In addition, the company has saved 200% on tire costs.

This report is typical of the savings B.F. Goodrich TW Analysis Men can make for industrial tire users. Their services are without cost or obligation—their recommendations unbiased because B.F. Goodrich makes a complete line of industrial tires. To find out how you can save, mail the coupon today. A special consulting service is available to manufacturers of materials handling equipment.

The B. F. Goodrich Company
Department TW-781, Akron 18, Ohio

I would like further information on your FREE TW Analysis.

NAME

COMPANY

STREET

CITY ZONE STATE



*Specify B.F. Goodrich
tires when ordering
new equipment*

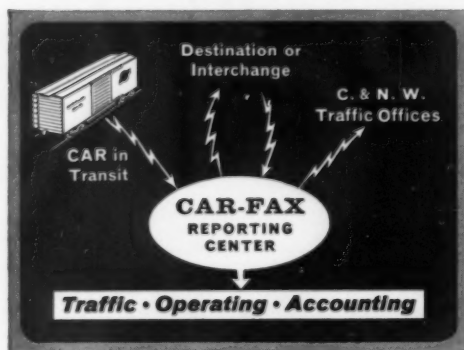
Smileage!

B.F. Goodrich industrial tires

Circle No. 5 on Card, Facing Page 55, for more information



Through a miracle of electronics...
YOU RIDE WITH YOUR SHIPMENT!



As indicated in the diagram above, Car-Fax Reporting Center receives constant information on the movement of every carload of freight moving over C&NW lines. This information is relayed to its destination or interchange and also to our traffic offices throughout the country. Up-to-the-minute location of any car is available by simply calling the C&NW traffic office nearest you.

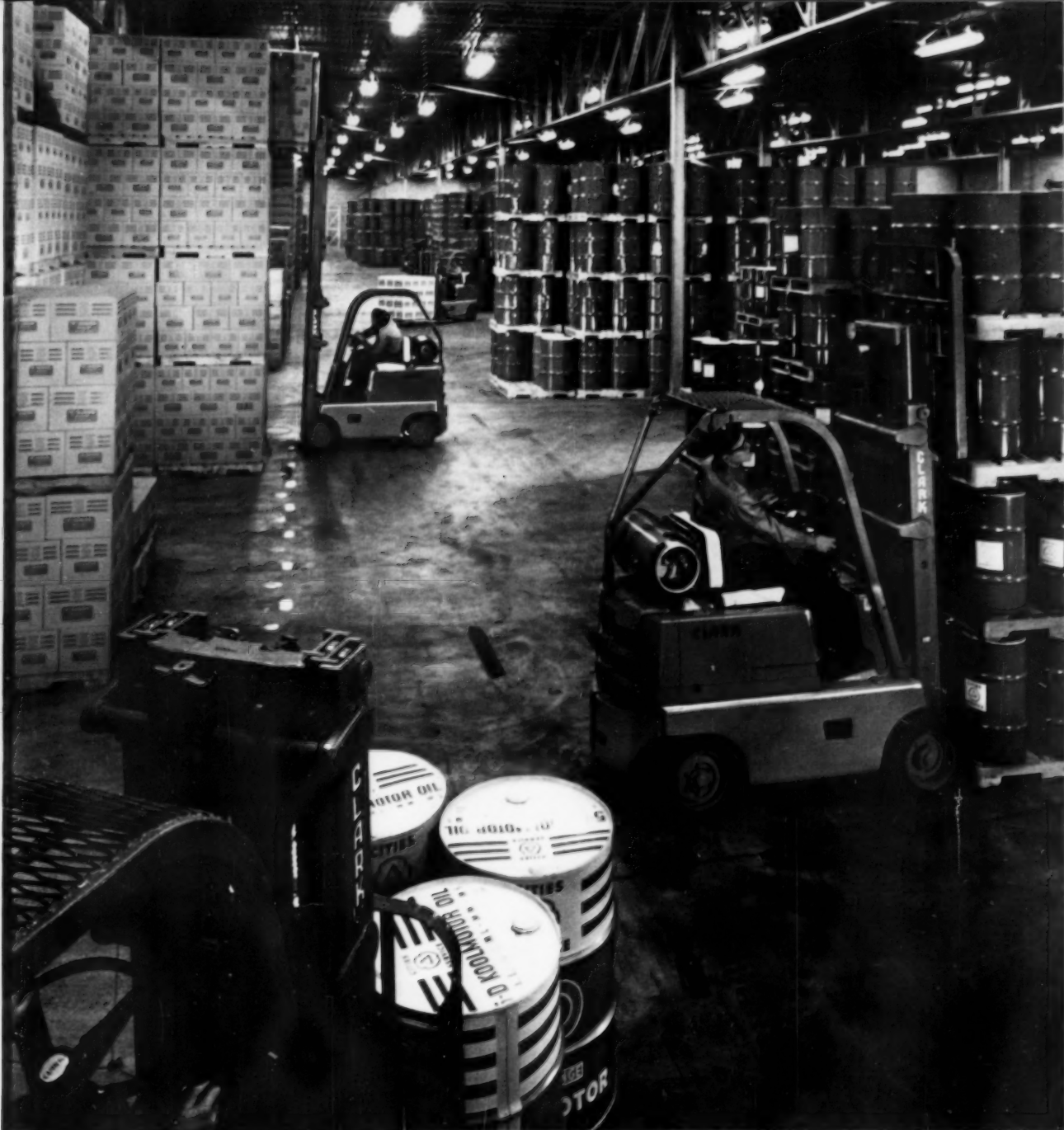
Car-Fax, North Western's new and exclusive electronic car locating system, reports carload shipment progress as fast and as accurately as if you, yourself, were riding in the locomotive cab.

It works this way: Whenever a car passes check points or enters or leaves the North Western System, IBM machinery speeds into action, detailing the move. If it is delayed, Car-Fax notes that, too. Almost instantaneously, car-coded information is processed and transmitted to all traffic offices concerned.

Accurate information on your car of freight is available to you when you want and need it. In addition to location, Car-Fax notes destination, point of origin, routing, contents and type of car, number, date and time of movement . . . data that can help you pinpoint deliveries to pre-plan production schedules or facilitate reconsignment.

Use Car-Fax. Route your freight North Western and watch Car-Fax work for you. We're sure you'll be delighted with this new freight service that gives you the score—now!

CHICAGO AND NORTH WESTERN RAILWAY



You're paying for new trucks...why not own them?

Times change. So does equipment efficiency. The new *Clarklift* fork trucks pictured above, for example, have been tested and proved to be 30% more efficient than the average truck in use today. Over four years of designing, testing, and field-proving has demonstrated time and again that *Clarklift* owners get a fast return on their investment in extra production alone.

And, of course, if you have old equipment, there's the high cost of maintenance to consider. If your present trucks are frequently down for repairs, you're paying dollars not only for the parts and labor involved, but you're also paying

for lost production, supply and shipping bottlenecks, poor use of manpower. It all adds up. It means you're paying for new equipment every day . . . *but without owning it.*

A planned equipment replacement program is worth investigating. Simply write: Planned Replacement, Clark Equipment Company, Battle Creek, Michigan. We'll arrange to have a representative call to survey your operation and explain the various programs available.

**CLARK®
EQUIPMENT**

CLARKLIFT is a trademark of Clark Equipment Company



IRON SHOD OXEN HAULED THE FREIGHT



UNTIL UNION PACIFIC BUILT STEEL HIGHWAYS

Trains of freight across the rugged West began with iron shod oxen, as relics and photos in Union Pacific's museum of railroad-ing testify.

Union Pacific ironed smooth the wrinkled lands to pioneer a level steel highway. This began the development of the West. Making the movement of freight across the West smoother and faster is a continuous project on Union Pacific.

Here at the right, is a photo of a new transcontinental line offering an additional route through the high terrain in Wyoming. It increases and improves service for shippers on U.P.

Likewise, new power units continue to increase the hauling efficiency of Union Pacific Railroad, moving freight even more smoothly and on faster schedules through the West. Union Pacific is the most experienced in the West.





WASHINGTON

DA

By Ray M. Stroupe, *Chilton Washington News Bureau*

SHIPPER DEMAND NOTED—Urban area growth will boost the demand for transportation efficiency, Neil J. Curry forecasts. Shippers will have greater influence on transportation developments, in the view of the chairman of the American Trucking Assns. Executive Committee. He believes shippers will not settle for anything less than coordinated carrier services. And he thinks truck transport will increase in importance to the U. S. economy.

SHIP COSTS VIEWED—Excess tonnage in the form of old, high-cost vessels is producing the basic world shipping problem, in the view of Douglas Dillon, under secretary of state. He stated this belief during recent informal talks with spokesmen for West European nations. An adequate American merchant marine must be maintained for defense, he stressed. But he noted that ships under the U. S. flag move only 15 per cent of American waterborne commerce.

CITES CARGO COSTS—Cargo handling costs must be lowered if the U. S. maritime industry is to survive, Ben H. Guill declares. Guill, vice chairman of the Federal Maritime Board, has called on the industry to face up to containerization of cargo, despite its problems, in the attack on costs. He placed handling costs of a ton of cargo in the U. S. at \$12 to \$14. The producer and shipper in Europe pay less than half as much.

PONDER SUBSIDY CUT—Transportation subsidies could be cut if the 10 per cent passenger fare tax is killed, Sen. Magnuson, D., Wash., has forecast. Chairman James Durfee, Civil Aeronautics Board, concurs in this view. If the tax is abolished, he claims, a rise in passenger traffic and, later, a subsidy reduction would follow. This tax brings in \$215 million a year, Sen. Magnuson notes, but it discourages travel.

HAS TRANSPORT PLAN—Combined efforts by carriers of different types could serve shippers best, ICC Commissioner Arpaia reasons. He envisions an offering of joint routes and rates

and container delivery by motor, rail, and water carriers. Side loading and unloading of rail-borne containers would pare down much costly switching of freight cars. This combined service would weaken the "fetish of separateness" in transportation, the Commissioner says.

CAR LACK ATTACKED—Hearings on the box car supply are being considered by House Commerce Committee Chairman Harris, D., Ark. He has introduced ICC-recommended bills to increase the availability of cars. Rep. Porter, D., Ore., who also sponsors a bill to combat the car shortage, says the supply might be 40 per cent below the lumber industry needs in the Northwest this year. He lauds the ICC for keeping close watch on unloadings and urging car repairs.

GENERAL ORDER DENIED—Shippers have been supported by the ICC in the dispute over carrier efforts to limit their liability on high-valued shipments. Motor and rail carriers' petitions for a general released rate order were turned down. Truckers asked to levy an extra charge on shipments of \$100,000 value, maximum (\$150 per package). Railroads proposed a \$200,000 maximum per shipment. But the ICC decides it cannot issue a general orders covering all cases.

PROPOSES NEW STATUS—Congress was prompted by the U. S. Department of Interior to incorporate the government-owned Alaska R. R. As proposed by the Interior Dept., the line would be under the Government Corporation Control Act and managed by a seven-member board of directors. This plan does not contemplate ICC jurisdiction over rates and operations of the road. The ICC has asked for this authority, but the Interior Department has opposed the ICC request, fearing a rate rise would be required.

BUSINESS RISE SEEN—Most container manufacturers contacted by the U. S. Commerce Department are optimistic about this year's business. Some 85 per cent foresaw a 5 to 10 per cent gain in the half-year just completed, compared to the first half of 1958.



*If they're
out of the way
—and need it
right away...*



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**A
Transportation
Man Asks . . .
Should I Buy
Aluminum
Or Steel
Trailers?**



New 1959 Exterior Post Aluminum Volume★Van

New 1959 Smooth Panel Steel Volume★Van



Q Does a Trailer have to be all-steel or aluminum?

A At one time, you had to make a choice. Now, with the flexibility of Fruehauf's new 1959 interchangeable line, you can specify some components in steel, others in aluminum, to attain the weight savings you need at the price you want to pay.

For instance, you can order aluminum frame crossmembers for a unit that is otherwise all-steel, for a major reduction in weight. Likewise, the roof bows, door facings, structural posts, and body panels are interchangeably steel or aluminum.

Q Does Fruehauf flexibility add to the cost?

A No—it saves you money! The actual interchanging is done on the production line . . . at mass production prices!

Q I'm no engineer. How do I go about making the best selection of components?

A That's easy. Just call your local Fruehauf branch. Once the Fruehauf representative knows the nature of your operation, and the price or weight you're shooting at, he will recommend a Trailer that's designed right and priced right for your specific needs. Give him a call today!

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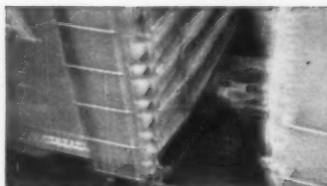
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Now, ship with greater safety for less cost with Firestone's

NEW Air-Blok



Dunnage cushion assures damage-free delivery



Jarring starts and jolting stops can't harm lading cushioned by Air-Bloks.



Air-Blok is easy-in, easy-out dunnage; one man can block entire car swiftly.



Air-Bloks are quickly deflated, rolled and tied with built-in straps for easy return.



Tough bladder is encased in treated canvas envelope for double protection.

Air-Blok is a tough Firestone rubber bladder encased in treated canvas. It supports lading with a uniform pressure over the entire surface of the dunnage. It absorbs shock, takes up slack and tightens the load to assure delivery without damage.

Air-Blok pneumatic cushions give lading maximum protection in shipment—save you the lost time and extra expense of filling the same order twice. Pneumatic dunnage has been proved in practice by the U. S. Army Quartermaster Corps.

Air-Blok is the no-waste dunnage. You buy cushions once, use them repeatedly, and save more with each trip. Customers return the Air-Bloks instead of the cargo.

Air-Blok lets one man block lading quickly and easily, lets cars load and empty faster. Labor costs come down, demurrage charges disappear.

Put Firestone Air-Blok to the test. A few experimental shipments will show savings in every way. For information write Firestone Industrial Products Company, Noblesville, Indiana.

Firestone

BETTER RUBBER FROM START TO FINISH

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"On the Seaboard!"

These men add still another railroad to Chicago's vast transportation facilities! They know the Seaboard thoroughly and can take care of your freight shipments in the Southeast to your complete satisfaction.

When you want Seaboard information — rates, routing, car reports and any other freight facts, just pick up your 'phone and talk to one of these experienced representatives. You'll like the way they follow

through in providing the kind of service for which Seaboard is famous.

Perhaps you're planning to expand your plant facilities in the Seaboard Southeast — the nation's most promising region for growing industry. Let Seaboard's staff pass the word along to headquarters, where detailed, factual plant site information will be assembled and sent you promptly.



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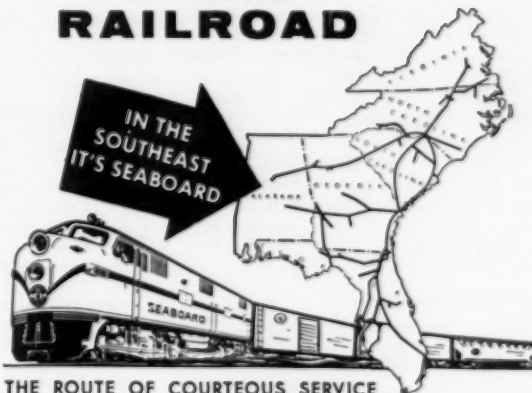
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CHATTANOOGA, TENN.	1015 James Bldg.	AMherst 6-3758
CINCINNATI, OHIO	1803 Carew Tower	MAin 1-5061
DETROIT, MICH.	1207 Lafayette Bldg.	WOodward 2-8404
HOUSTON, TEX.	5610 Kenilwood	REpublic 4-0738
KANSAS CITY, MO.	1204 Fairfax Bldg.	VIctor 2-4747
LOUISVILLE, KY.	320 Heyburn Bldg.	JUNIper 4-3413
MEMPHIS, TENN.	922 Exchange Bldg.	JAckson 6-7067
NASHVILLE, TENN.	830 Third Nat. Bank Bldg.	ALpine 6-7427
NEW ORLEANS, LA.	914 Hibernia Bk. Bldg.	JAckson 5-7888
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the six great states served by Seaboard.*

SEABOARD

AIR LINE RAILROAD



THE ROUTE OF COURTEOUS SERVICE

Fraternity Officers Installed



Installation of officers was held recently by the Denver, Colo., Chapter of Delta Nu Alpha. Front row, left to right, are: William H. Behr, Jr., secretary; Jack R. Scanlan, president; Gail H. Crawford, retiring president; and Allyn N. Lockwood, treasurer. Back row: Vernon D. Gabe, first vice president; J. F. Holtzer, national Delta Nu Alpha president; and Morris Cooper, second vice president. Holtzer was the installing officer.

Carrier Safety Award



The ATA President's Trophy was presented to Pacific Intermountain Express at the recent ATA meeting. K. N. Beadle (left), director of safety and driving, accepted the trophy, a recognition of the carrier's over-all contribution to highway safety. Welby Franz, first vice president of the ATA, made the presentation.

of Pacific and Atlantic Shippers, Inc., freight forwarding subsidiary of Pacific Intermountain Express Co.

—Rail

Robert Byrne—promoted to sales manager of the Railroad Loading Equipment Div., Evans Products Co., Plymouth, Mich.

W. R. Murphy—elected vice president and general sales manager of all divisions of the Sparton Corp., of Jackson, Mich.

Materials Handling

D. F. McCarron—named vice president-sales for Globe Hoist Co., of Philadelphia.

Edward J. Dwyer (shown)—elected president of The Electric Storage Battery Co., Philadelphia. **Elmer B. Ott**—becomes chairman of the Board.



Bert E. Phillips—appointed acting general manager of Clark Equipment Co.'s Industrial Truck Div., Battle Creek, Mich.

John G. Fenton—newly appointed president of Howe Scale Co., Rutland, Vt.



George R. Brockway (shown)—appointed president of The Vac-U-Lift Co., Salem, Ill. **David Van Slyters**—named sales promotion and advertising manager.

George H. Woodland—elected to the Board of Directors of the Chain Belt Co.

Walter C. Bass—appointed general sales manager of The American Pulley Co., Philadelphia.

Men in the News

Traffic

C. J. Kraus—new traffic manager at the West Allis Works of Allis-Chalmers Mfg. Co.

Walter J. Vukin—assistant GTM of Fruehauf Trailer Co., Detroit, has been admitted to practice at the bar of the ICC.

Reynold A. Sandberg—appointed southwestern traffic manager of United States Gypsum Co. with headquarters at Dallas, Tex.



Urban E. McFarland—assigned to the newly created position of general traffic counsel, Owens-Illinois Glass Co., Toledo, Ohio. **Richard E. Knudson**—appointed general traffic manager.

William J. Knorst—named executive vice president and dean emeritus, College of Advanced Traffic, Chicago. **Alex E. Berendt**—newly appointed dean.

Transportation—Air

Milton Patterson—named to the newly created post of cargo sales superintendent, Pan American World Airways, Pacific-Alaska Div.

Keith Halliday—appointed to fill the new position of director of mail

services for the Seaboard and Western Airlines.

Chan Gurney—served as a U. S. delegate to the 12th Session of the Assembly of the International Civil Aviation Organization at San Diego, Calif.

—Highway

Pierre DuBois—will represent the National Highway Users Conference in Colorado, Nevada, Utah, and Wyoming. His home will be in Salt Lake City.

A. S. Glikbarg—named president

Coming Events

July 12-15—Truck-Trailer Mfrs. Assn., 11th Annual Summer Meeting, The Homestead, Hot Springs, Va.

July 14-17—Allied Van Lines, Annual Meeting, Drake Hotel, Chicago.

July 28-30—Air Freight Cartage Conference, Chicago.

Sept. 9—Southern Traffic League, Annual Meeting, Jacksonville, Fla.

Sept. 20-23—Associated Traffic Clubs of America, Annual Convention, Baltimore.

Sept. 23-24—National Small Shipments Traffic Conference, Annual Meeting, Chicago.

Oct. 4-8—New York State Warehousemen's Assn., Convention, Whiteface Inn, Lake Placid, Whiteface, N. Y.

Oct. 11-14—National Defense Transporta-

tion Assn., Annual Convention and Logistics Forum, Olympic Hotel, Seattle, Wash.

Oct. 16-17—Heavy-Specialized Carriers Conference, Hotel Biltmore, Los Angeles, Calif.

Oct. 18-23—American Trucking Assn., Annual Convention, Statler Hotel, Los Angeles, Calif.

Shippers' Advisory Boards

July 29-30—Northwest, Missoula, Mont.

Sept. 21-22—New England, Poland Springs, Me.

Sept. 23-24—Atlantic States, Rochester, N. Y.

Oct. 6-8—National Assn. Shippers Advisory Boards, New Orleans, La.

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"Hold up that crew!"

It means a lot to any shipper to know when his shipment will arrive. Especially in the perishable fruit and vegetable business it can be the difference between profit and loss. Take, for instance, a car load of early vegetables from the south, consigned to a northern city not long ago.

The consignee knew his car was due and had arranged for a crew to be on hand for prompt unloading. But late in the afternoon before the expected early morning arrival the car had to be set out due to bad order.

This information was immediately reported by CLIC—C & O's all-teletype car reporting service—to the C & O traffic office at destination.

The consignee's office was closed but the manager was reached at home and informed of the delay.

Later, he was given re-forwarding information and rescheduled arrival time as automatically reported by CLIC.

Here's what the consignee's manager had to say:

"In view of the advance information given about this car, I should like to commend a fine organization which is able to supply up-to-the-minute information so necessary to successful operation in the perishable fruit and vegetable business.

"Incidentally, that phone call from your perishable agent's office saved our firm a considerable sum of money in man hours and time and one half thus avoided."

Aren't there times when it would mean a lot to you to know where your shipment is at the moment? If it is anywhere on the C & O, CLIC can tell you.

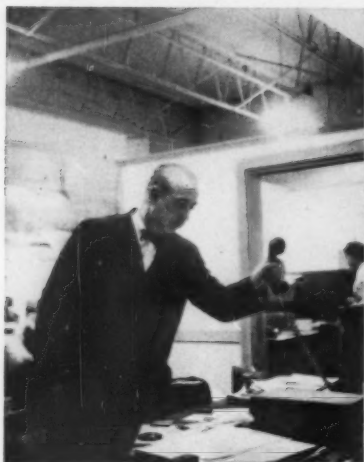


Would you like a copy of a booklet describing CLIC? Just write:

Chesapeake and Ohio Railway

3800 TERMINAL TOWER, CLEVELAND 1, OHIO

S H I P C & O . . . A N D W A T C H I T G O !



"A phone call from New York . . . and we can ship a Flexi-Van within a few hours—direct to the customer or to our warehouse, which is in an economical off-rail location. We can keep inventories small there without danger."



"You can see the capacity advantage that Flexi-Van gives us. It's about 20% bigger than the trailer on the right. Most Amfile products are light for their size. But we can pack enough into Flexi-Van to meet minimum weights."

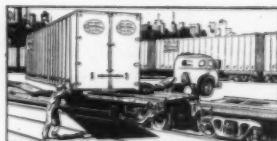


"A Flexi-Van shipment of Amfile phonograph record-carrying cases will leave Kankakee, Ill., tonight for New York," says Gilbert Amberg of Amberg File & Index Company. "And in 36 hours it will be rolling up to our Long Island City warehouse. These cases are bulky; distributors don't like to stock too many. But they want fast service on orders. Using Flexi-Van, we can give it to them."

Gilbert Amberg says: "FLEXI-VAN helped Amfile cut 8-day delivery to 36 hours"



Your freight is loaded, locked in under your supervision.



Van boards freight at trackside. Transfer time, 4 minutes.



Shipment rides low, well cushioned aboard high-speed cars.



Beats trucks on long hauls. Two pick-ups or three deliveries.

New York Central Railroad

Write: R. L. Milbourne, N.Y. Central, 466 Lexington Ave., N.Y. 17, N.Y.



JULY 1959 . . . VOL. 58, No. 7

THE TREND in ICC decisions—ever lower comparative rates for ever greater comparative volumes—makes it appear that guaranteed rates are destined for ultimate approval.

However, this is a matter of considerable dispute. It deserves a careful review.

Since the passage in 1887 of the Act to Regulate Commerce, U. S. rail carriers have promoted many forms of volume rates. Their efforts generally have been successful.

The First Position

Originally, the ICC took the conservative position that any form of reduced rates for greater volumes would work a hardship on the small shipper. In 1890, the ICC took a more liberal viewpoint.

It said that lower rates could be assessed for specified carload volumes than could be assessed for less volumes. The reasoning accredited for this shift in rate setting procedure was that lower rates could be charged for greater volume when justified by proven lower costs.

In 1909 alternate rates for varying volumes were approved for application. Multiple carload rates were permitted in the famous Molasses Case, 235 ICC 485, in 1939 for the first time¹.

The current effort for a new form of volume rate has taken the form of guaranteed rates. Late in 1958, the Minneapolis, St. Paul and Salt Ste. Marie Railroad (Soo Line) elected to sponsor guaranteed rates in a test case.

Essentially, the same justification is being offered as was offered in support of carload volume rates in 1890—they are justified on the basis of lower costs made possible by an assured volume and a greater volume.

Inherent within this proposal, however, is the danger of competitive rate wars. These were not threatened in the adoption of car-

The Future Of Guaranteed Rates

What will be the effect of guaranteed rates on shippers, carriers, and consumers? This writer sees many factors for the ICC to study

load rates, alternative and incentive rates, and multiple carload rates. It is this aspect of guaranteed rates which deserves close examination.

The Rate Proposal

The guaranteed rate proposal of the Soo Line has been filed with the Interstate Commerce Commission. The Freight Traffic Managers Committee of the Western Trunk Lines Committee has amended the proposal by making it applicable to traffic of all member roads.

The Soo Line proposal would provide for the following:

1. Shippers who would qualify for the proposal would be those shipping pipe or tubing, steel or wrought iron, welded or seamless, in carloads, minimum weight of 80,000 lb per car, from Salt Ste. Marie, Ontario, to Chicago, Ill., and points in the Chicago area taking Chicago rates.

2. The qualified shippers would be guaranteed that no change could be made in the rate for a period of twelve months unless the minimum rate order of the ICC would require the railroad to make an increase.

3. Shipments which qualified under the guaranteed rate proposal

would be guaranteed a rate of \$10.05 per 2000 lb, including the Ex Parte 212 general increases. The present rate of \$12.18 per ton would continue in effect for shipments which did not qualify for the guaranteed rate.

4. The railroad would receive in return a guarantee from the shipper that at least 90 per cent of the tonnage would move by the rail carrier giving the rate concession between points defined during a 12-month period.

Other Provisions

Some of the other specific provisions spelled out in the "Rules and Regulations Governing the Application of Guaranteed Rates" are as follows:²

"(1) Notify the tariff publishing officer in writing of intention to make shipment under Guaranteed Rates.

"(2) Furnish an indemnity bond satisfactory to the Soo Line Railroad conditioned upon payment of the normal tariff rate in event of non-compliance with the provisions of this item and the item naming the Guaranteed Rates.

(Please Turn Page)

¹Wheeler, Edward K., "Volume Discounts in Transportation: Future Trends," *Traffic World*, December 20, 1958, p. 42.

²"Rail Proposal for 'Guaranteed' Rate Called First in U. S. Under 'Agreed Charge' Ideas," *Daily Traffic World*, December 5, 1958.

THE FUTURE—There is much economic justification for the adoption of a low-cost, large-volume carrier to compete rate-wise in a Congress would enact legislation to legalize guaranteed rates should the ICC. . . . However, the ICC is directed to promote and preserve has been very reluctant to sanction any carrier action which would

. . . Guaranteed Rates

(Continued from Preceding Page)

"(3) Show on bill of lading covering shipments made under Guaranteed Rates the following notation: 'Shipper desires this shipment to be transported under Guaranteed Rates and agrees to comply with all rules and regulations governing such rates as published and on file with the Interstate Commerce Commission.'

"(4) Keep a complete and accurate record of all tonnage transported from and to points provided with Guaranteed Rates.

"(5) Furnish an affidavit at the close of the guarantee period setting forth complete tonnage figures, showing amount transported by rail under Guaranteed Rates and the amount handled by all other forms of transportation.

"(6) Permit an authorized representative of the Soo Line to have reasonable access to the shippers' records to verify compliance with provisions of this tariff.

"(7) In event shipper fails to fully comply with rules and regulations provided in this item and in the item naming the Guaranteed Rates, shipments on which guaranteed rates have been applied will be re-rated and charges will be assessed, and shipper becomes obligated to pay to the carriers in final settlement total charges which shall reflect normal tariff rates in effect at time of shipment from point of origin."

The Railroad Case

The most compelling argument in support of the rail carriers is that in a competitive economy there is little justification in denying a

competitor the use of a procedure which might result in lower costs, lower rates, an improved competitive position, and increased gross profit.

To deny this opportunity might appear to be the enforcement of "umbrella rates" for the protection of higher cost competitors. In a competitive economy prices must reflect competitive costs. Thus, if reductions in railroad costs of carriage would follow the adoption of guaranteed rates, it would seem that the economic justification of the plan is self apparent. However, this is based on the assumption that reductions in costs would follow the application of guaranteed rates and that even more compelling economic reasons for not adopting the plan were not existent.

Act of 1958

It might also be contended that not only has the trend of ICC decisions been in the direction of more liberality but also that the Transportation Act of 1958 encouraged competitive rates. Under this act, the following direction was given the Interstate Commerce Commission:²

"Rates of a carrier shall not be held up to a particular level to protect the traffic of any other mode of transportation, giving due consideration to the objectives of the national transportation policy declared in this Act."

Clearly, the Transportation Act of 1958 admonished the Commission to refrain from enforcing

"umbrella rates." It says that carriers will be permitted to indulge in rate competition even though they might have a detrimental effect on competing carriers.

The fact that Canadian railroads are indulging in guaranteed rate making practices is additional incentive for U. S. railroads to be given equal competitive powers. Canadian and U. S. railroads compete vigorously for certain hauls.

The most common criticism of volume rates in the past was that they would be discriminatory toward the low volume shipper. The railroads can correctly refute this by pointing out that the opportunity for indulging in guaranteed rates would be open to all shippers regardless of their volume of shipment during the twelve-month period.

The guaranteed rate proposal does not stipulate that shipments must accumulate a designated vol-

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² Public Law 85-625, 85th Congress, S. 3778, Section 6 (3), August 12, 1958.

tion of guaranteed rates by rail carriers.... This centers around the competitive price economy. . . . There is precedent for believing it be given sufficient recommendations from carriers, shippers, or a transportation system which can serve the nation's needs. . . . It threaten to result in destructive rate competition. . . . It is a good

ume during the given twelve months. They only require that 90 per cent of the shipments of the given product between the given points by the shipper be moved by the rail carrier offering the plan.

Possible Results

Under a number of possible circumstances the introduction of guaranteed rates could increase the volume of movement of the given product between the given points for the rail carrier involved. And, if the volume of movement was increased for the rail carrier it might properly be assumed it could reduce costs per ton mile of carriage. This would justify the reduction in costs to some extent. If the guaranteed rate plan reduced railroad rates where the rail rate was formerly too high to be competitive, it would divert some traffic to the railroads. Or, if rail rates were somewhat equal to competitive

rates before the guaranteed rates, it could likewise be assumed that a reduction in their rates would divert some traffic. Another great possibility might be that the lower rates under the Plan might generate new traffic. Under any of these circumstances, the volume of traffic would likely be increased and the cost per ton-mile of movement reduced.

Negative Side

Then there is the negative side. There are a number of circumstances in which guaranteed rates would not reduce costs through increased volume—or might result in lower overall gross revenue despite an increase in volume. For example, if most of the product already moved between given points by rail, the reduction of rates might not increase total volume. It would decrease gross revenue. But it would be a shortsighted rail carrier that would introduce guaranteed rates under these circumstances. A more probable detrimental effect would result if the precedent for applying guaranteed rates was adopted by competing lines. This could result in a rate war that might dissipate the revenues to all the participating carriers.

It would appear at first glance that shippers could only stand to gain by reduced transportation costs from guaranteed rates. This is not entirely true. Shippers do not benefit from rates which fluctuate to the extent that they forbid long-range planning. Downward spiraling of rates could hurt shippers in two ways. The first would be the problem rate changes would present to long-range planning in buying, expansion, etc.

The second damage could result from rising rates which might fol-

guess that the ICC will only authorize guaranteed rates under very limited circumstances where assured volume of certain bulk products would so reduce costs as to justify their application.

low a reduction of rates below the point justified by increased volume. Once the carriers realized their reduced rates only brought about competitive reductions rather than increased volume, they would return rates to their former level.

Shippers who established new plants or increased existing plant size under the assumption of permanently lower rates would sustain major losses.

It would seem that the ultimate consumer would probably gain from the losses of either the carriers or shippers (wholesalers and manufacturers) or both.

However, consumers cannot gain from events which increase mortality or confusion in planning to their producer sources—not in the long run at least. So, it may be concluded that guaranteed rates would be socially beneficial under circumstances in which they increased the stability of planning to the participants, and they would be socially damaging under circumstances in which they disrupted the long run stability of planning to all participants.

Looking at the guaranteed rate proposal from a legalistic viewpoint, it would seem that there are
(Please Turn to Page 62)

first glance that ship-to gain by reduced from guaranteed rates. true. Shippers do not which fluctuate to the long-range planning. of rates could hurt The first would be the would present to long-The second damage ing rates which might rates below the point volume . . .”

Needed: A Research Section

The cost of one management study by an outside group will pay

ARE YOU willing to try new methods and techniques? Do you consider suggestions from department personnel for improvements? Or do you hire outside "experts" to interview your employees and make many of the same suggestions to you?

The money spent on one management study by an outside organization would operate a research and development section in your traffic department for a considerable period of time. Instead of one report costing thousands of dollars, you will have a continuous report of traffic activities.

Time and motion study, marketing research, statistical quality control, and economic analysis, as well as linear programming, are some of the scientific

By Charles A. Taff
*Professor of Transportation
University of Maryland*

research methods which are available to a traffic department when there is a research and development section.

A separate section in the traffic department is the type of research organization which is needed. A program of this kind must be under the direction of an individual with imagination. There must be full support on the part of top management; it should be clear that it is established on a long-term basis. If research is undertaken with the sole expectation of short-run advantages, the results may prove disappointing.

There are two broad types of research activity. One is termed "basic" or "pure" research. It is concerned with basic scientific investigations undertaken in order to discover or develop new fundamental facts, theories, natural laws, or relationships. The results of such research will usually have no immediate application in industry. The other type is termed "applied" research. It is the application of basic scientific knowledge to specific problems. Applied research is the type which is used in traffic management.

A research and development section will cut across all aspects of the traffic department and will deal with related fields. It will study, analyze, and develop plans, policies, and programs or procedures which are assigned to it. In addition the department will undertake to assure that the services, facilities, and equipment are developed for top efficiency.

Time and motion studies may be applied to clerical functions, such as documentation. They already have been applied widely to physical functions, such as shipping and materials handling. The transportation aspects of marketing research may develop information on a greater penetration of the market because of rate structure analysis.

Construction of warehouses in certain areas or the use of public warehouses may affect markets.

Statistical quality control and economic analysis — particularly in analysis of private versus for-hire transportation, in rate studies and site locations, and in the

Traffic Research Section Projects

Time and Motion Studies

- Documentation
- Packaging
- Materials handling

Marketing Research

- Greater penetration through
 - Changed transport policy
 - Use of public warehouse
 - Construction of warehouse

Statistical Quality Control and Economic Analysis

- Private vs. for-hire transport
- Rate studies
- Site locations

Linear Programming

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prevention of variables in the quality of transportation — are subjects.

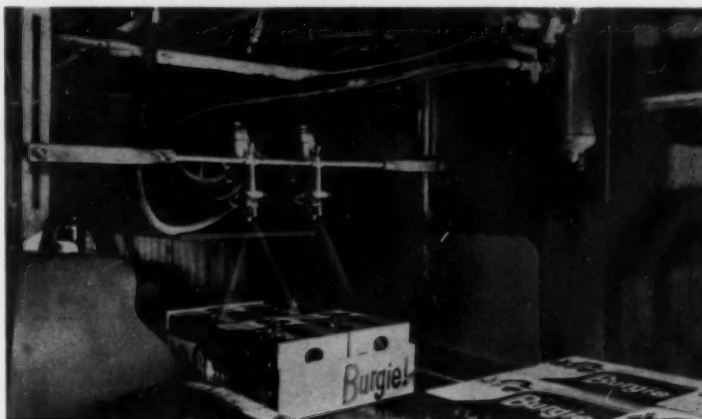
The technique of linear programming uses advanced mathematics. It is a means for determining the best course of action to follow where a large number of solutions are possible.

The formulation of a proper statement of the problem to be solved is the phase of linear programming which is the most difficult. It involves putting numbers on factors, some of which are not usually expressed in numbers. Thus stated, the problem can be solved mathematically.

Any of these methods may be used by a research section. Regardless of the technique chosen, any scientific research is characterized by freedom from bias, judgment based on facts, selectivity, objectivity, rationalism, and reasoning.

As part of its departmental responsibilities the traffic department should be alert to the advantages of full-time research. Many traffic managers would like to be able to buy a few more hours for each day so that they could sit back and think about the potentialities of their departments. Many have ideas which need to be thought through or tested. A departmental section devoted to research will insure that there is time. New ideas can be tested.

Those methods already in use can be analyzed and new approaches tried. The amount which is expended for transportation warrants a good look at the manner in which it is spent. ●



Non-Skid Spray

Eliminates Pallet Tying

APPLICATIONS of a non-skid coating to the tops of six-pack boxes have allowed two breweries to reduce damage in transit at their plants.

Previously, damage to cases at Regal Brewing Co., and Burgermeister Corp., San Francisco, was a result of the cases shifting off of fork-lift trucks onto the work area.

At the Burgermeister operation, non-skid is applied by spray through two parallel guns located above the conveyor line. This is illustrated in the photograph which accompanies this article.

Mist Spray

An electric eye actuates the guns as the six-packs pass underneath. A fine mist of coating falls on top of the packs and dries almost immediately. The cartons then travel a short distance along the conveyor line where they are palletized.

The non-skid coating is applied differently at the Regal Pale Brewing Co. Packs containing 12-oz and 16-oz cans receive the non-skid material through means of a special

roller coating device developed at the brewery.

A revolving drum picks up the material directly from the glue pot and applies it to the tops of the six-packs. Use of the drum prevents the coating from touching exposed cans. The glue pot is opened at one end where the revolving drum retains the liquid.

Adjustment of the space between drum and edge of pot makes it possible to control the amount of coating applied.

The coating was developed by Morningstar-Paisley, Inc. It is used on solid fibre and corrugated shipping containers, also with multi-wall bags.

The film enables a high-gloss paper or board to be used as a printing surface without the usual palletizing and stacking problems. Appearance of the package is not affected because the coating is invisible when applied by spray.

The coating dries to a non-blocking, tack-free film. It can be applied by a hand spray, or a solenoid-operated spray gun at the end of the case sealing machine. Simple rollers or brushes are also very practical. ●



Orders telephoned in by supermarkets are filled the following day



Careful truck routing allows rigid delivery schedule at minimum costs

Assembled orders are checked, marked, and loaded into special truck



James W. Straub
Executive Vice President,
Merchants Refrigerating Co.,
New York
is interviewed by
D. O. Haynes,
DA Materials Handling Consultant

Distribution and



ONE OF the NARW sessions at the last AWA Annual Convention in Washington, D. C., included a panel discussion on the subject "Should Public Refrigerated Warehousemen Distribute Frozen Foods?"

Frankly, your correspondent was somewhat puzzled by the question. For some time now, forward-looking public refrigerated warehousemen have been providing a distribution service to the frozen food industry. It is fait accompli. Since this is the situation, the question seems to be not should the service be provided but, rather, how can it be handled most effectively.

One member of the above-mentioned panel was James W. Straub, executive vice president of Merchants Refrigerating Co. of New York City. His company has operated a Frozen Food Service Division for some years. Knowing him personally, and having a high regard for his successful experience

and keen judgment, your correspondent arranged for an interview to obtain the key "how-it-is-done" procedures. His answers, and explanations of the economic factors involved, are of value to cold storage warehousemen as well as their customers.

Is there an established pattern or standard for "distribution" of frozen foods by refrigerated warehouses?

"No, not one that can be applied in all cases. The distribution phase of our service, like other services rendered by our industry, has evolved to meet changing conditions. As service companies, we have to expand the types of services we offer to keep in step with the needs of our customers.

"Not too many years ago, our primary function was to provide suitable cooler and freezer storage space for the protection and preservation of foods. This was a basic

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the Refrigerated Warehouse

How refrigerated warehouses are filling distribution needs of the frozen food industry is covered in this exclusive interview with a warehouseman who is meeting the problems with optimism

economic need to provide an even distribution of products produced in widely varying annual cycles. The need for this type of service has diminished because of the leveling off of the production cycles and improved means of transport directly from producer to retailer.

"Ever since frozen food distributors assumed their function in the marketing pattern of frozen foods, refrigerated warehouses have rented them space so that they could carry on their function efficiently and economically. This was made possible by the central location of the warehouse and accessibility of frozen food stockpiles.

"As the volume of food store chains increased, and as sales of frozen foods multiplied, it became obvious that an economical means of order selection and trucking, serving all the chains was needed. In the New York-New Jersey-Connecticut area, such a service was started in 1950 and has grown continuously."

Since the requirements vary, how is distribution service adapted to meet them?

"To answer this question I have to break down distribution into its component functions. Considered in a broad sense, distribution includes:

- "1. Selling the storage product.
- "2. Performing the clerical work in connection with order preparation, inventory records, accounting, etc.
- "3. Stock-piling under scientifically controlled conditions.

"4. Order selection and assembling.

"5. Trucking.

"In individual cases additional services, such as recapping and price extension, may be provided but two principal types of distribution service by warehousemen have evolved. One is where the warehouseman performs all the distributive functions, including selling. The other is where the more limited services of order selection and delivery only are performed.

"The kind of distribution service provided by some refrigerated warehousemen includes the full range of functions. In practice, this amounts to taking over the total service normally rendered by frozen food distributors; including packer representation, selling, and right on through to delivery of the product to retailers.

"In some instances, the warehouseman assumes product ownership. With this type of distribution, the driver is also a salesman. Trucks are often loaded with an assortment of products. The driver-salesman offers these to the retailers and makes on-the-spot deliveries.

"We recognize that this type of distribution service by warehousemen is useful in certain instances. At present, Merchants has been working along somewhat different lines. Through our Frozen Food Service Division and our subsidiary, Howell Trucking Co., we aim to serve chain stores, groups of independent retailers and, perhaps in the future, even distributors with

order - handling, assembling and trucking.

"Although these basic functions can be flexible in scope, they do not include selling. We feel that we can serve our customer interests best by relieving them of certain distribution details through a specialized, impartial service. This permits them to concentrate their efforts on production or selling, as the case may be.

"In Metropolitan New York, Buffalo, and St. Louis areas we consider Merchant's type of service to be similar to that of United Parcel. That is a pooling of deliveries for various customers to save extensive transportation duplication.

"In the frozen food center we are about to build in Secaucus, N. J., just across the river from New York City, we are planning a new type of service for the producers of frozen prepared foods. Their problems differ considerably from those of fruit and vegetable packers, whose products must be processed immediately after harvesting.

"In many production centers, as on the West Coast, there is not sufficient storage space available to meet peak seasonal requirements. The industry has selected a few key cities farther inland where stocks are sent and stored. From these cities they are moved to local distribution centers in response to consumer demands.

"In contrast, the processor of prepared foods — pies and waffles, for example — has far more control
(Please Turn to Page 64)

Anatomy of an Ocean

IN LAND transportation such factors as cost of service, out-of-pocket cost, value of service, value of the commodity, and competition are common considerations in rate proceedings. When it comes to ocean freight rates, the anatomy becomes more complex.

Nature of Competition

Competition in ocean transportation is and always has been more severe than in domestic transport. This will become apparent as the following inherent differences between them are examined briefly.

- Freedom of the seas. No roadbed, no highway, no shoals, no license. The seas are as free as they always were. Ships of all flags can literally ply the seven seas.

- Investment required to engage in ocean seamanship transportation can be as little as the monthly charter rate for a vessel used under a time charter. It is completely possible to rent a ship and use it for any trade desired; if the owner so agrees, of course.

- Competition in ocean shipping is truly international in character. It involves not only the vessels of the flags of various nations but also the purchases and sales—imports and exports—of countless merchants who engage in international trading. Since each ship and each merchant is its or his own nationality, it inevitably causes a clash of sovereignties. Therefore, the laws of any one country cannot rule the seas. There is no international law to govern.

- A ship is a complete unit of transportation. Its capacity is fixed at the time it is built and cannot be changed without expensive alteration. Air transportation

Competition, costs, and commodities go together to form today's ocean shipping rate. Strong rate construction is the key to less misunderstandings

equipment also fits into this characteristics but trains, motor carriers, and pipelines do not.

Each ship also is a power plant. In light of the rigidity of its capacity, it is most advantageous that the ship always be "full and down." That is a common expression in ocean shipping. It emphasizes the importance of space as well as weight in assessing freight charges.

For the most profitable use of the carrying capacity of a ship, its space should be full and its depth capacity completely utilized. It is good business to do this, even if it is necessary to accept some cargo at lower rates.

Principal Rate Factors

Probably the most exhaustive examination of the anatomy of ocean freight rates undertaken in recent years, can be found in the Proceedings of the InterAmerican Maritime Conference of 1940. Beginning at Page 152 of that report, many factors are listed as entering into the determination of conference freight rates. These factors do not relate to charter rates; only to line rates of conferences. Also, such factors as a non-conference line might consider are excluded. With these exclusions, there still are 27 factors cited in the report.

It makes dull reading to list these 27 factors. Yet, they are important because, collectively, they are the ingredients that com-

prise "the anatomy of ocean freight rates."

For easier understanding and assimilation, these principal items can be presented in the following four broad groups: The commodity, loss and damage, competition, and cost.

The Commodity

The nature of the commodity is a major factor in the anatomy of ocean freight rates. This is true of all transportation.

In ocean shipping, the commodity factors break down into seven others.

- Character of the cargo.
- Volume of cargo. This is a very essential factor. It raises the question as to whether there will be a regular and continuing volume over a period of time.

- Availability of cargo. Is it ready? A ship cannot afford to wait idly. At the same time, it cannot risk offending a shipper. If a given shipment misses a certain sailing, it may be a week or



DISTRIBUTION AGE

Rate

By Roland L. Kramer

Professor, Commerce and Transportation,

University of Pennsylvania

two before another sailing occurs.

- Value of the merchandise. On this factor, all transportation agrees. It is an application of the concept of a tax, in that heavier levies are made on those commodities which are better able to bear them.

- Stowage of the cargo. How well does it stow? How much broken stowage—unused space—will result? Remembering the inflexible nature of the capacity of a vessel, the matter of stowage is of prime importance.

- Relationship of weight and measurement; i.e., W/M, S/O to try to get the ship full and down.

- Possibility of securing return cargoes. This is an application of the concept of balanced trade. It applies to all transportation. In tanker operation, it is not a factor since tankers are almost entirely one-way in operation.

Loss and Damage

Of the 27 factors listed in the

Proceedings of the InterAmerican Maritime Conference of 1940, only three can be definitely assigned to loss and damage. They are:

- Susceptibility to damage
- Susceptibility to pilferage
- Packing

The liability of a common carrier in international trade for loss and damage is quite different from that of railroads, motor carriers, pipelines, and airlines. As a matter of fact, water carriers are exempt from all kinds of liability as regards cargo.

The Carriage of Goods by Sea Act of 1936 and the earlier Harter Act of 1893 define the responsibilities of ocean carriers. In very general terms it can be said that if due care is exercised in the performance of the duties of the owner and his crew, there is no liability.

However, if cargo is accepted with obviously poor packing and loss and damage results, the carrier would be responsible. That is why these three factors are cited among 27 that we are calling the anatomy of ocean freight rates.

Competition

Competition surprisingly accounts for only three of the 27 items, although its importance is much greater than this comparison in number would indicate. The three are:

- Competition with goods from other sources.

- Cargo via competing gateways.

- Competition from other carriers.

Competition of other carriers is not unique in ocean shipping. It is found in all transportation. As stated above, however, competition from other carriers can arise

without any warning and little, if any, protection due to the uncontrolled nature of ocean transportation.

Competition with goods from other sources is essentially unique in ocean transportation. The carrier must consider the competitive standing of exporters from all countries into a given country and not just American competitors. For this reason it is always asserted that rates to various markets from all competing origins tend to bear some relationship.

No carrier would willingly refuse to adjust rates on a given product if it is assured that such an adjustment would provide cargo that otherwise would be lost to a competing exporter in another part of the world. In other words, ocean carriers are obliged to consider the influence of international trade competition rather than domestic competition.

Cargo via competing gateways reflects the importance of domestic as well as port competition. If ocean rates from Gulf or Pacific ports were at such a level as to favor shipments to and from certain markets via ports on those seaboards, carriers and shippers favorably situated with respect to the Atlantic seaboard would lose all of their business. This is another big subject that involves not only ocean rates but also the peculiar export-import railroad rate structure of the United States.

The Cost

Costs account for one-half of the 27 factors listed. Factors are:

- Heavy lifts which always require extra charges.

- Extra lengths may do likewise.

- Direct cost of operation must be covered, if it is possible.

- Distance is a cost factor, but it is not rigidly recognized in ocean rate making. There is no such concept as a mileage scale in ocean shipping.

- Cost of handling would include stevedoring; the employment of longshoremen in loading and unloading the ship.

- Lighterage also is a cost of loading and unloading. Usually, it is incurred at ports where ships cannot tie up at piers or quays.

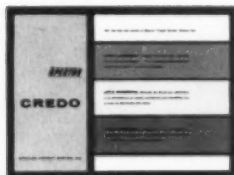
(Please Turn to Page 63)

ABOUT THE AUTHOR: Roland L. Kramer has enriched his background in the field of transportation by handling assignments for the Commerce Department, U. S. Maritime Commission, Federal Maritime Board, the Governor of the Panama Canal, and several Eastern railroads. He is also active in foreign trade associations. Along with his educational endeavors, Kramer has prepared this series of articles in the form of an export shipping primer for DISTRIBUTION AGE readers.

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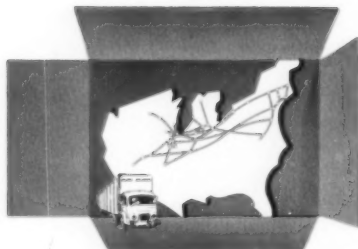
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Basic Rules for Classification

Freight moving out of the plant with the wrong commodity description may

ONE OF the greatest errors an industrial traffic man can make is to allow freight to move out of his plant without using the proper commodity description.

First, it is very likely that a higher rate than would otherwise be applicable would be assessed by the carrier. Second, problems pertaining to carrier liability may also arise. It should be noted, though, that the billing description does not necessarily control the determination of the applicable rate. Within the prescribed time limit, an overcharge claim may be filed with the carrier or an undercharge claim may be made by the carrier asserting that a different rate applies.

The following is only a broad summary of the classification rules along with a few interpretations. They should give the reader some idea of the subject matter of classification rules. There is no real substitute for the complete rules as printed in the classification.

Rule 1. Articles Classified Subject or Not Subject to Uniform Bill of Lading Conditions. This rule calls attention to the uniform bill of lading prescribed by the ICC. If the shipper does not want to accept the conditions of any one of these bills of lading but would rather have the carriers governed by common law liability (liable for all loss and damage except Acts of God and acts of public enemy), the shipper must state so on the bill of lading and pay 10 per cent additional freight charges.

By Kenneth U. Flood
Associate Professor
Georgia State College
of Business Administration

Rule 2. Description Should Conform to Classification Description. Articles must be described according to the classification or tariff description. A carrier has the right to inspect the goods.

Rule 3. Property of Extraordinary Value Not Accepted. Carriers will not accept property of extraordinary value, such as bank bills, jewelry, and money. If the commodity is specifically rated in the classification, it does not come within this rule and therefore the freight must be handled by the carrier.

In a recent case the ICC held that common motor carriers posing the usual certificate authorizing the transportation of general commodities, except those of unusual value, have the right to transport pennies and nickels.

Rule 4. Freight Liable to Damage Other Freight or Equipment. The ratings in the classification do not obligate carriers to receive freight likely to impregnate or otherwise damage equipment or other freight. Such freight may be accepted and receipted for, subject to delay for suitable equipment, or may, for lack of suitable equipment, be refused. For example, fish tend to impregnate other commodities loaded in the same car.

Rule 5. Bases for Charges on Shipments Not Complying with

Classification. Carriers may refuse to accept freight that is improperly packed.

Motor carrier classifications provide for alternation in packages. A higher grade container can be substituted for a lower grade container. The railroads do not allow substitution. Also, certain motor carrier tariffs contain provision that ratings or rates found in that tariff will apply only when such articles are tendered for shipment in the kind of container specified.

If the container does not conform to the packing requirement, freight charges shall be advanced 20-50 per cent on lcl and 10-20 per cent on carload shipments. The motor carrier rule contains a penalty of 20 per cent on ltl and 10 per cent on volume shipments.

An important case based upon this rule involved a long-distance van line and a large trucking company. The carrier of general commodities contracted to handle uncrated office furniture, assessing the published rate on crated office furniture plus a penalty. The household goods carrier complained. The Commission held:

"In view of our conclusion that the presence or absence of packaging of the various articles with which this complaint deals has no relation to defendant's right to transport such commodities, we must further conclude that no violation of section 206 of the act by defendant has been shown, and the complaint should be dismissed."

Rule 6. Marking Freight. Each

of Freight

cost you money

package or piece must show name and address of the shipper and of one consignee. All pieces need not be marked if the shipment weighs more than 6000 lb. Packages containing fragile articles, or "order" or c.o.d. shipments must be so marked.

Rule 7. Information to Be Shown on Bills of Lading. This rule contains information to be shown on the bill of lading and conditions under which shipments will be delivered when shipped on an order bill of lading. It also contains provisions to cover situations where the original order bill of lading is lost or delayed.

Rule 8. Advancing Charges Not Permitted. No charges will be advanced to shippers, owners, or their agents. For example, on c.o.d. shipments, the carrier must collect the c.o.d. from the consignee before paying the shipper the amount of the c.o.d.

Rule 9. Prepayment of Guarantee of Charges. All charges must be prepaid or guaranteed on shipments which in the judgment of the agent of the carrier could not at a forced sale bring in enough money to pay the charges at the destination. In most cases the item containing the classification description of the commodity having little general market value, such as advertising matter, will state that this freight must move prepaid. But, in case this provision is not stated, the carrier's agent has the right to demand the prepayment of freight charges.

Rule 10. Mixed Carloads. When a number of articles having different carload ratings, rates, or

Classification Rules

1. Articles Classified Subject or Not Subject to Uniform Bill of Lading Conditions.
2. Description Should Conform to Classification Description.
3. Property of Extraordinary Value Not Accepted.
4. Freight Liable to Damage Other Freight or Equipment.
5. Bases for Charges on Shipments Not Complying with Classification.
6. Marking Freight.
7. Information to Be Shown on Bills of Lading.
8. Advancing Charges Not Permitted.
9. Prepayment of Guarantee Charges.
10. Mixed Carloads.
11. Gross and Estimated Weights.
12. Mixed Packages.
13. Minimum Charges Per Shipment.
14. Definition of Carload Freight.
15. Less Carload Shipments Subject to Carload Charges; Carload Shipments Subject to Less Carload Charges.

minimum weights are shipped as one carload, charges will be determined by applying the highest rate.

Also included in this rule are alternative methods of calculating charges, such as considering part of the shipment as a carload and part as an lcl shipment. The shipper is entitled to the alternative that provides the lowest aggregate charge. This rule is substantially the same in both rail and motor classifications.

It should be noted that this classification rule has a very limited application. Most motor and rail tariffs are subject to Modified Rule 10, the one major exception being the tariffs on transcontinental traffic.

Under the modified rule, each article in the mixture is carried at its own rate. . . . The carload minimum weight is, however, the highest for any article in the mixture; and, if the total weight of the shipment is less than the applicable minimum weights, the deficit or difference between the actual weight and the carload minimum bears the rate applicable to the highest rated article in the shipment.

EDITOR'S NOTE: "Advanced Traffic Management" is published by William C. Brown. In a later article, Mr. Flood will discuss other rules for classifying freight.

The modified rule used by motor carriers is based on the same idea. It allows the freight to be carried at its own rate. Not all motor carrier rules on this subject provide for assessing the highest rate to the deficit weight. Some assess the rate applicable to the lowest rated article in the shipment or prescribe a set rating regardless of what is actually being shipped.

Rule 11. Gross and Estimated Weights. This rule states that the freight charges shall be computed on the gross weights which include pallets and skids. Dunnage must be computed separately, as prescribed in Rule 30 of the railroad classifications.

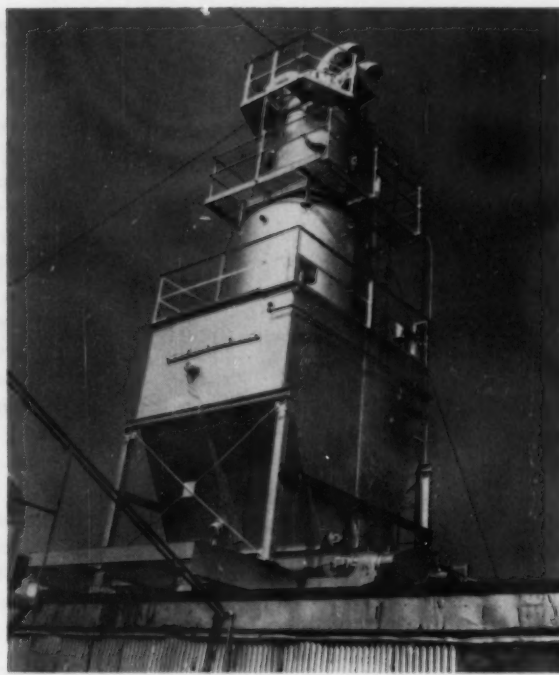
It should be noted that most railroads have published an exception to this rule. It says:

"When freight in carload quantities is prepared for shipment in conformity with packing requirements and, in addition is loaded on pallets, platforms or skids, with or without standing sides or ends, but without tops, no charge will be made for the transportation of the pallets, platforms or skids, provided shipper specifies the weight of the pallets, platforms or skids on the bill of lading."

(Please Turn to Page 65)



Workman loosens wood flour with hoe as bulk material is withdrawn by means of Fuller Airveyor at 6 tons per hour



At General Electric's processing plant, wood flour is automatically handled. Note two explosion vents on top

New Twists in Tubes Speed Bulk Handling

The smooth and almost effortless flow of bulk material from carrier to storage and back again through modern bulk handling systems is steadily replacing old-fashioned brigade operations

BULK handling case studies involving such free-flowing material as wood flour, alumina, paddy rice, poultry and stock feed, hominy, sugar, and hops illustrate how modern handling systems are achieving maximum savings in labor and space.

The General Electric Co.'s Phenolic Products Plant at Pittsfield, Mass., for example, formerly handled incoming wood flour in bags. Wood flour is a finely ground wood material used as a filler in phenolic molding compounds. It previously

took 16 manhours to unload a car, it now takes six.

The plant's two conveying systems provide an automatic operation requiring the services of one part-time man and one full-time operator. The first system handles unloading of wood flour from rail cars into two 45-foot high storage silos. The second system reclaims stored material for processing in a plant 360 ft away.

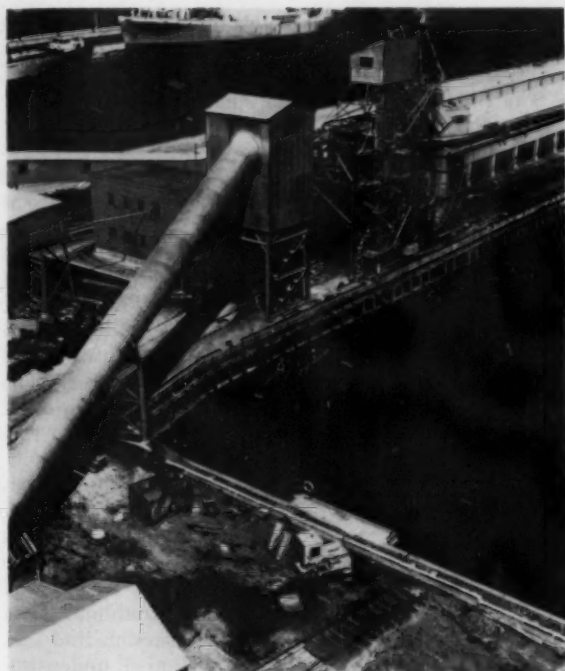
When bags were used, men had to load them on dollies and wheel the loads to distant elevators. Such

handling consumed both time and valuable storage space.

Both conveying systems are the vacuum type. With such a system, turbulence, velocity, and oxygen further reduce the possibility of an explosion.

How Unloading Works

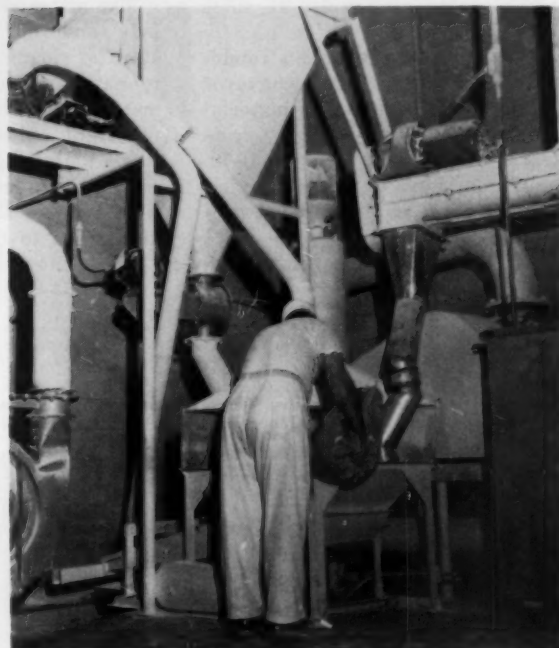
The unloading station is large enough for spotting two box cars, but only one is handled at a time. An operator inserts an intake nozzle on the floor of the car. He then selects the proper switch, on a



Here at Powell Wharf, the Aluminum Co. of Canada, Ltd., loads alumina aboard freighters. Tube houses conveyors



Emergency equipment which saved 1,600,000 lb of rice is shown pulling away from Vanderford Ranch at Yuba City



Bagged ingredients for blending with family flour are dumped into pick-up hopper for conveying to storage bins

nearby panel, to direct the material into one of the two silos.

Both filter receiver and silos are made of metal with numerous vents of aluminum foil or masonite to provide outlets in the event of an explosion.

At the foot of each silo there is a rotating plow unloader. It is powered by a 5-hp motor which transfers stored wood flour into the recovery system. A rotary feeder at the base of each silo delivers material to the air conveyor. The rotary feeder is helpful in isolating damage in the event of an explosion.

A filter receiver atop the processing plant receives wood flour and drops it through a rotary feeder and two-way gate into either of the two 3000-lb capacity service bins.

A constant supply is assured by high and low indicators. They automatically maintain maximum and minimum levels in the bins.

A 12-ft screw conveyor at the bottom of each bin carries wood flour to a discharge pipe. Another revolving shaft with spiked projections agitates the material to keep it from bridging.

Push buttons at the control

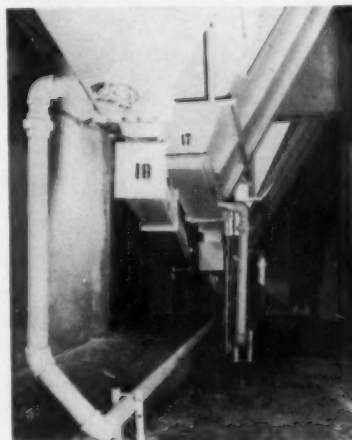
panel control delivery of wood flour through gravity pipes from each bin. The material is discharged from 10-in. pipes into an automatic scale.

A further combination of pneumatic systems and conveyors is providing an unusual and efficient method of loading alumina on ships at Port Alfred, Quebec.

Port Handling

Alumina is loaded aboard ships at Port Alfred for ocean shipment after having been transported in hopper-bottom railroad (Please Turn Page)

Numbering designates different bins. Slides are 12-in. open-type fast flow



...Bulk Handling

(Continued from Preceding Page)

cars from the calcining plants of the Aluminum Co. of Canada, Ltd., located at Arvida, 21 miles inland.

Pneumatic conveyors in combination with a single belt conveyor move the alumina. The material is elevated 117 ft vertically from track hopper through a 10-in. aluminum pipe to a disengaging box situated at the top between two storage silos.

Enclosed-type slides of weather-

tight construction distribute material from disengaging box to the storage silos. They require no other enclosure. The slides receive the alumina from the fluid lift disengaging tank and transport it to the center of the 60 ft storage tanks.

The silos are equipped with open-type slides installed in a palmate pattern which converges on an opening in the tank wall. The slides are activated so that the alumina is discharged through a flow-regulating gate to a closed-type slide.

The material then is carried by belt conveyor. An accurate measure of loading rate and total tonnage is provided by a flow-meter belt scale. To permit loading light ships at extreme high tide, a lofting elevator which travels on a gantry, is equipped with a short section of slide. It discharges to the elevator.

While the two installations pre-

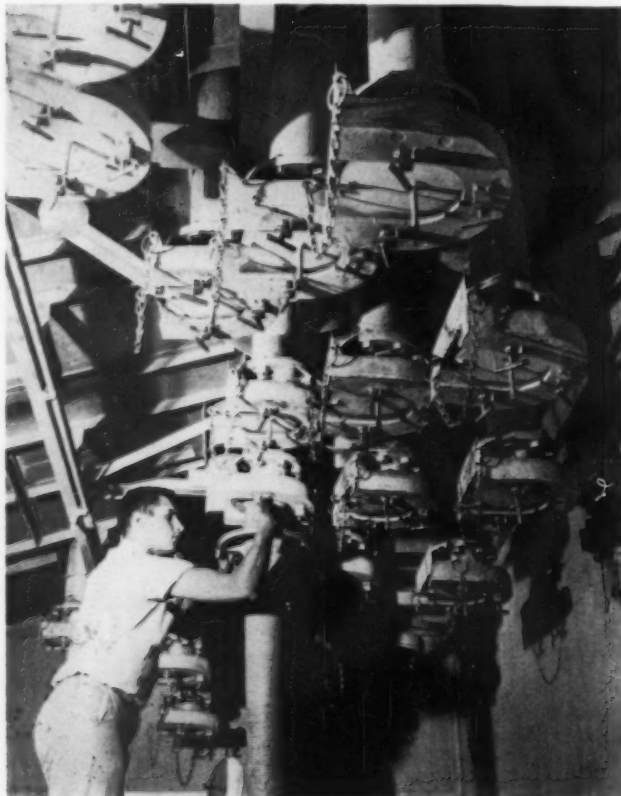
viously discussed were permanent in nature, pneumatic bulk handling systems need not be, as the following instances illustrate.

Portability

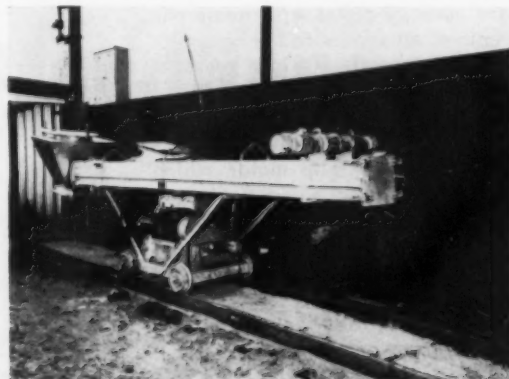
The Rice Growers Association of California owns three systems which may be used by its members in time of need. When the Feather River overflowed its banks at Yuba City, Calif., such a system was dispatched so that approximately \$80,000 worth of paddy rice could be saved. The system operated around the clock until a total of 1,600,000 lb of rice was removed.

A recent fire at Knight's Landing, Calif., caused extensive damage to the warehouse and rice drying facilities of the Sutter Basin Co-op, another association placed one of its portable systems near the bins. A suction line was connected to a tunnel under the bins. The tunnel housed reclaim-

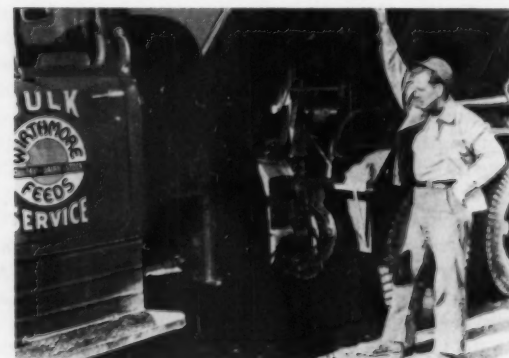
Operator connects flexible hose from pneumatic blower line to coupling for one of 24 vertical risers that convey flour to silo



Trolley line conveyor rolls out of steel garage, stands ready for use by Clarke Bulk Transfer Co.



Ring pulls permit selective loading of three compartments of bulk truck made by Sprout-Waldron



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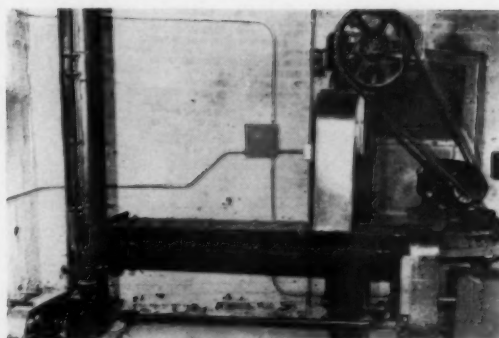
ing belt conveyors which had failed to operate because of fire damage.

The suction lines removed the rice from the bins to a receiver atop a trailer unit. There, it was delivered under pressure to large trucks at the discharge end. Air for both vacuum-type conveying operations was supplied by twin-rotary, positive-pressure exhausters driven by diesel engines.

Another pneumatic case history deals with what appeared to be a poor construction site, but proved most fortunate for General Mills, Inc. That company built a flour mill in the Louisville, Ky., area. Eight pneumatic conveyors were installed. The total system enabled the milling company to enjoy all of the advantages of the selected location while overcoming the disadvantages of narrowness.

Each of the eight conveyors plays a specific part of the blend-

Screw elevator lifts meal to 6th floor from the 2nd



ing and packaging operation. The plant has bulk storage for 2250 tons. It can high-speed pack 200-lb bags. General Mills, Inc., has used the system to follow the industry trend toward bulk handling and storage as a means of achieving greater quality control, plant sanitation, and economy of production.

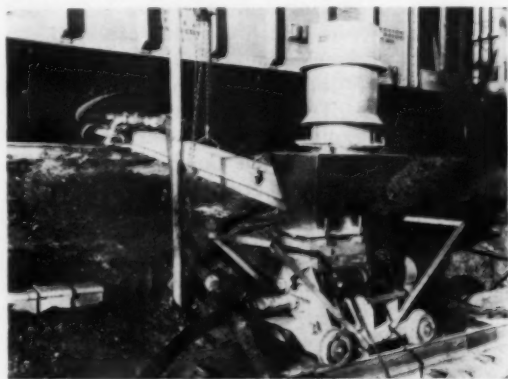
Facilities permit the unloading of standard hopper cars and slide

cars at the rate of 40 tons per hour.

Rail Transfer

A trucker in Pennsylvania who hauls bulk bread flour for a baker, who uses a trolley-line conveyor to speed operations, had the problem of transferring flour from car to truck at a rail siding. It was solved by a trolley con-
(Please Turn Page)

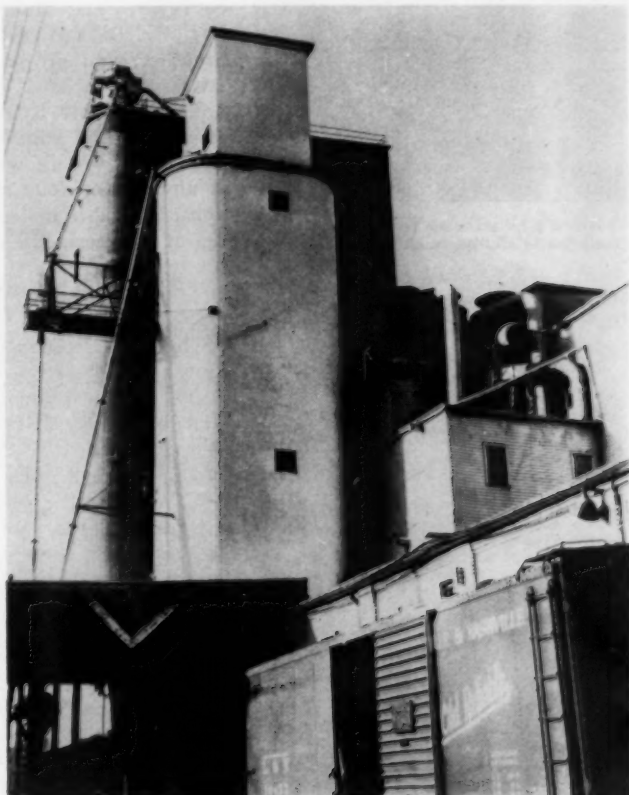
Operating along a narrow gage track, the trolley line conveyor is positioned adjacent to rail car

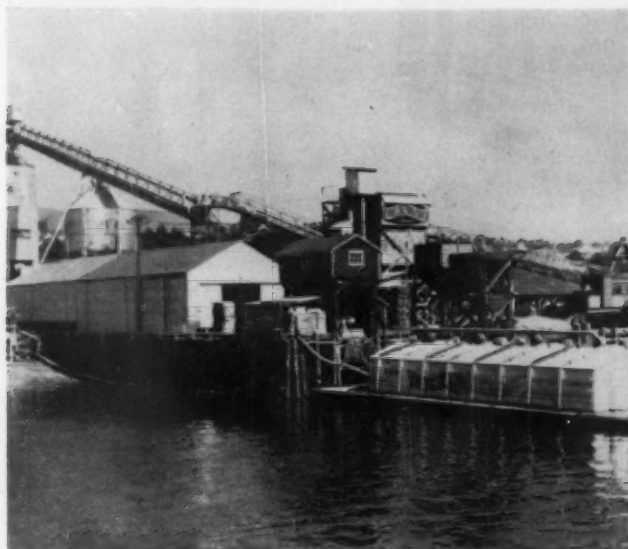


Vacuum side of blower is used for self-unloading. Cylindrical collector separates feed from air flow

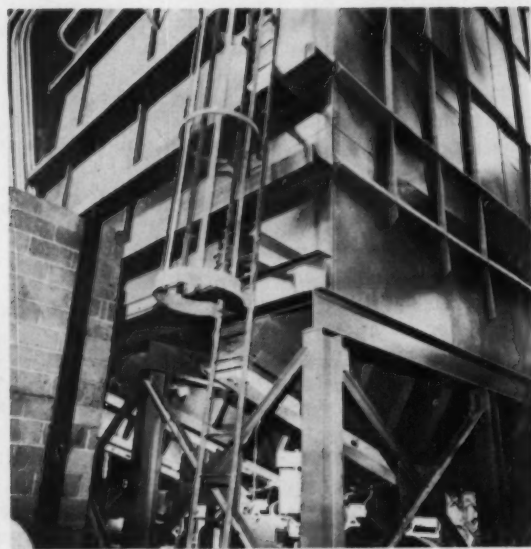


Exterior illustration shows a mill at North Kansas City, Mo. Note pneumatic tube rising from freight car shed at far left

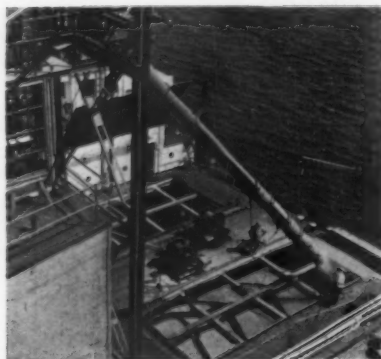




Cement from barge is pumped to storage silo, second tank from left. From there inplant pump conveys to mix plant at far left.

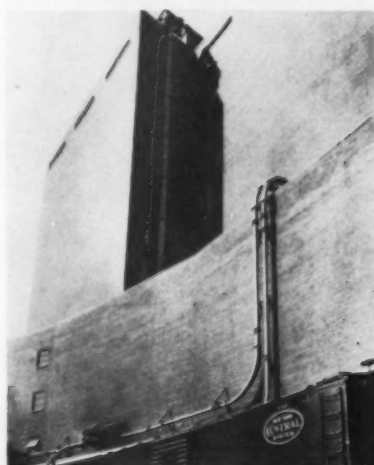


The Airslide storage bins are filled and emptied pneumatically. Storage capacity is up to 600,000 lb



This grain elevator at Toronto waterfront loads 35,000 bushels per hour

Malts and grits are being unloaded from this boxcar into storage bins



veyor which consists of a lightweight aluminum slide fluidizing conveyor, an aluminum surge hopper, a rotary feeder, a breather, and air and conveying hoses.

The assembly is mounted on a small car that runs on a narrow gage track. It allows positioning at any one of four slide car stations. Housed in a steel shed at one end of the track, the unit is rolled out when needed and set up adjacent to the slide car which is to be unloaded.

The slide component of the unit, supported by a chain from a swivel boom, is hooked to a discharge opening at the bottom of the car. After air hoses and conveying lines are connected, the flour is ready for transfer.

Flour flows from the car by gravity through the slide into the surge hopper, through the feeder, and pneumatically through a flexible rubber hose into a loading nozzle at the top of the van. Flour dust is collected and retained by the breather on surge hopper and dust filters.

Representing the feed industry's move toward pneumatic bulk

... Bulk Handling

(Continued from Preceding Page)

handling is Wirthmore Feeds, Inc., Boston, Mass. It uses a self-loading and unloading bulk truck with which one man can load, deliver, and unload an average of 30 tons of feed a day.

Wirthmore's bulk station is an example of automated feed handling. Feed can be automatically unloaded from box or hopper cars either to the bulk storage bins or directly to a bulk truck.

In storage space bulk pays off. Sacked feed is usually stored seven to ten sacks high and the space near the ceiling is wasted. Sacked feed requires more space for similar tonnage than does bulk.

A mill in Kansas City, Mo., replaced its bucket elevator with a vacuum-type air conveyor. The ingredients handled by the system include soft feeds such as barley, wheat shorts, bran, dehydrated alfalfa, hominy, and gluten feed. The overall average rate of unloading is 25 tons per hour.

Screw-Type

For a change of pace, a large producer of matzos — wafers of

unleavened bread—and matzo meal replaced a worn-out system for elevating bulk, free-flowing material with a screw-elevator system.

The system includes two 9-in. diameter screw elevators and supplementary screw conveyors and accessories. The lower elevator receives meal on the second floor of the matzo bakery and lifts it 23 ft to the fourth floor. There a screw conveyor feeds the meal into the second elevator. That elevator lifts it 27 ft to a screw conveyor which discharges the meal into the main storage bin on the sixth floor.

As part of the growing trend toward bulk distribution of cement by water carrier, Gilley Brothers, Ltd., a Canadian firm, now employs barges which unload cement at an average rate of 450 to 600 bbl per hour. The barges have capacities of 4500 bbl.

The barges are completely self-contained with all loading equipment and necessary facilities on board.

Cement is stored in four V-bottomed hoppers. It is pneumatically loaded by pump at the cement mill through an 8-in. transport line which runs above the hoppers. Even distribution of the cement load is made certain by three transport line diverting valves above the roof.

The bottom of each hopper is fitted with a 10-in. open-type fluidizing conveyor which is placed at an 8-deg. angle. Air is provided by two 15-hp rotary motors. A butterfly valve controls the flow of air to each area. The slides consist of rigidly mounted porous fabric.

When 2½ to 3 psi of compressed air is introduced through the fabric, the cement becomes fluidized and flows like liquid.

In the unloading operation, cement from the hopper slides transfers to the pump via 10-in. enclosed slides. Flow gates regulate the stream from any quadrant. It enables the operator to control the trim and heel of the barge when necessary. Large ventilators on the barge house top prevent pressure from accumulating during unloading.

Surge Hopper

The unloading of flour from a trestle at a Cleveland bakery hinges on a surge hopper and a pressure-type air conveyor system.

The surge hopper does not require a pit, it would be undesirable in flour handling operations due to sanitary requirements. A centrally located panel in the bulk storage room controls the whole process.

The panel is designed to graph-

ically duplicate the sequence followed by the flour through the system, by the use of panel lights in a flow diagram.

In another Canadian operation, the City of Toronto has an elevator-to-ship grain loading system which was built with the St. Lawrence Seaway in mind. The Seaway is helping to further develop the Port of Toronto as a transshipping point.

Elevators and loading facilities are used by shipping companies who wish to trans-ship grain through the Port.

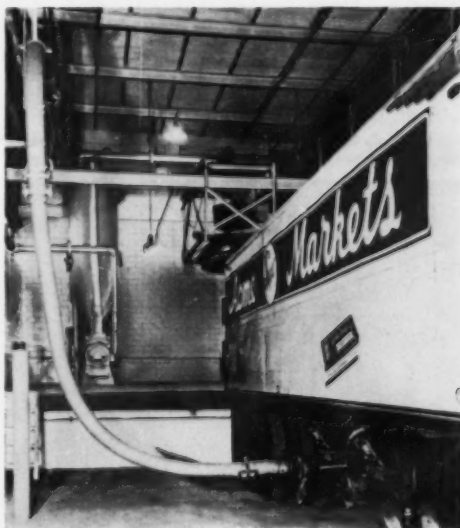
The out-loading system includes a chain conveyor and telescopic spout with a capacity of 35,000 bu an hour. The chain conveyor system was preferred over a belt conveyor because it is dust-proof, and requires less space and structural support outside.

Ship loading is carried out by three men. One is in the control room above the dock, two others are on deck.

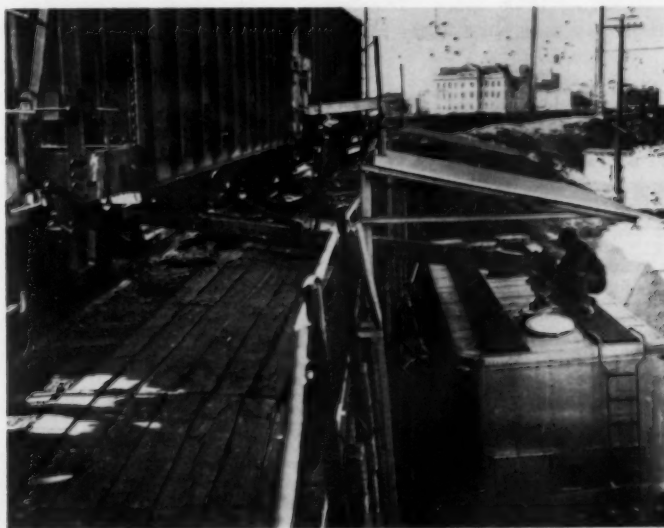
American Stores in Philadelphia uses sugar from a nearby refinery. Sugar is trucked to the bakery, a part of the Philadelphia warehouse, and delivered to storage in bulk form. To unload sugar, flexible steel hoses are hooked to an outlet on the trailer.

The hoses are connected to a
(Please Turn to Page 101)

American Stores bakery is shown receiving a shipment of sugar through flexible steel hose



Bulk flour van shown here is receiving load from Airslide car. Flour flows at speed of three tons per minute. Cuts deliveries



Warehouse Tightens Stock Control

New warehouse and shipping facilities, coupled with an electronic computer, allow this manufacturer to maintain a distribution schedule as efficient as it is complex

A COMPLETELY new shipping, processing and warehousing procedure has been instituted by Purolator Products, Inc., Rahway, N. J.

The two major factors in making the new system possible were the acquisition of new warehouse and shipping facilities and an electronic computer. With the automotive industry expanding every year, manufacturers have been looking to speed up service to their customers. Speed and economy in processing orders is a vital factor in improving service.

The warehouse, located at Port Newark, a Port of New York Authority facility, provided over 100,000 sq ft of space. The location was selected for its proxim-

ity to all modes of transportation—within a quarter mile radius of Newark Airport, New Jersey Turnpike, and water and rail facilities.

The warehouse has been divided into four separate and distinct sections, designed for speed and ease of operation. The first unit, covering over 35,000 sq ft, is the shipping area. Here a team of men picks the orders as they are received. Under the supervision of Charles Harbutt, general traffic manager, Al O'Neill, assistant traffic manager, and a warehouse manager, the latest equipment has been purchased to aid this team in its job. In all, there are 31 people working on the order processing, stocking, and loading and unloading opera-

tions. Five modern lift trucks are in constant use.

Over 900 different items, manufactured by Purolator, for the automotive industry, are fed to this shipping and storage area. The finished goods are brought in by rail and truck. Unloading and loading is simplified since the new center has 23 truck-trailer loading docks and 15 railroad loading spots.

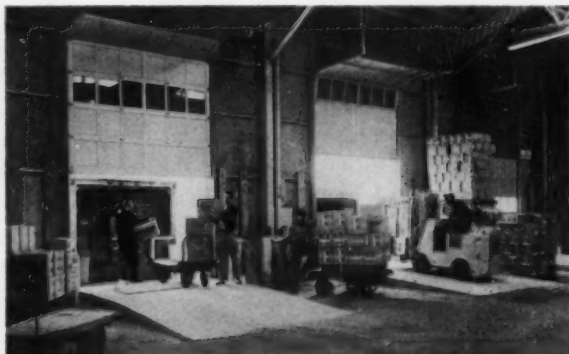
In the shipping area one copy of the order and a packing slip stay with the truck until the complete order is ready for shipment. Completed orders then are assembled by areas so that maximum advantage of truck space is utilized. All deliveries are made by common carrier.

By keeping everything cen-

Over 100,000 sq ft of warehousing space assures Purolator of the inventory necessary to maintain its shipping schedules



Truck loading docks, 23 of them, assure fast loading and excellent schedule maintenance. There are 15 rail platforms





Shipping area teams pick orders from standing stock moved to this central location (shown) from the three-section warehouse. Siding is of aluminum

trally located, Purolator can ship to all areas, and, with its tremendous inventory, can meet all requirements with an absolute minimum of back ordering. The new warehouse is the hub of the entire order processing operation.

The main plant in Rahway, a short distance from the shipping center, manufactures all after-market filters sold through service station dealers and garages. Products go direct from the production line to the shipping and storage center.

The same holds true for the Ringtown, Pa., and Kent, Ohio, plants. The Wayne, Mich., plant ships its after-market products

to the center but ships original equipment items directly to the manufacturers.

An interesting point of construction of the new shipping center is its outside covering. With an eye to keeping maintenance costs low it was constructed with corrugated aluminum siding and roof.

All departments concerned with the movement of merchandise are coordinated with each having a thorough understanding of the problems of the others. Meetings were held with department heads working out their phase of the new system so it would coincide with all other departments. The

new procedure has enabled the production department to be better informed on inventory. The combination of all products under one roof and the additional information given by the computer has made the inventory just about fool-proof.

A perpetual inventory is kept with minimum and maximum order points. This information is available for finished stock at the shipping center and for raw materials at the plants. The invoice comes off the computer in six copies: original bill of lading and a shipping label, packing list which is enclosed in the shipment, carriers copy of the bill of lading, copy for file, a customer's original, and a duplicate.

Cards fed into the computer are coded for freight category as to the type of rates paid on merchandise. There are four classifications:

- Oil filter—iron or steel.
- Oil filter cartridges and/or air cleaners.
- Hardware—iron or steel.
- Miscellaneous—It is written in, for example—promotion material.

The computer totals the number of packages and the weight for each of the four categories. It also totals the number of packages in the order and the weight of the entire shipment. The invoice shows, automatically, the carrier to be used.

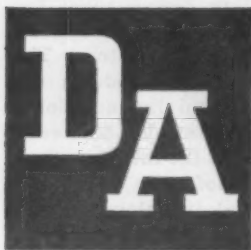
If the total weight permits parcel post shipment, the computer calculates the charges and adds them to the invoice total.

To further simplify the operation the computer calculates the number of items in each carton. Ordering is now done by carton rather than quantity. For example, a certain type filter is packed 12 to a box. An order comes in for 144 filters. Purolator places the order for 12 cartons and the machine interprets this information from the number of cartons to the total items. This has helped to cut down shipping errors. It also is better for the customer in checking orders as they arrive.

Orders now are being processed within 48 hours and, as the system takes hold, it is expected that time will be cut even more. ●

This warehouse was selected for its proximity to all modes of transportation. It is situated near Newark, N. J., airport, turnpike, water, and rail facilities





NEW PRODUCTS

... FOR FURTHER INFORMATION

Tilting High Fork Lift

For high stacking of pallet and skid loads of materials, Barrett-Cravens Co. recommends this tilting-type fork high-lift truck. It comes in capacities from 1000 to 3000 lb with varied fork lengths and widths to han-



dle any size load. Free lift of the forks varies with each model. However, it can be as much as 65 in. Two speeds forward and two backward are included. A switch prevents forward-reverse power from being applied while brake is on.

Circle No. 35 on Card, Facing Page 55

Vacuum Cleaning System

Factory cleanliness is claimed to be a simple matter when a Lamson Corp. central vacuum cleaning system



is used. The system consists of a cyclone primary dust separator, secondary bag-type separator, exhaustor and motor unit, piping system, and fixed pick-ups or flexible nozzles.

Circle No. 36 on Card, Facing Page 55

Drum Lifting Hook

Handling drums of volatile liquids in hazardous areas has been solved by this new development from Morse Mfg. Co. The cast hook is made of non-sparking manganese bronze. It is

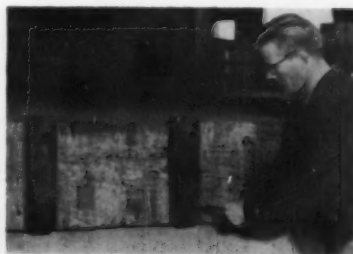


connected to a 3-in. diameter bronze ring with double 7/16-in. diameter brass rods. The hooks have clearance for a 3/4-in. rim and will accommodate standard 55-gal drums as well as any drum to 34 in. long. Lifting capacity is 1000 lb.

Circle No. 37 on Card, Facing Page 55

Rubber Dock Fender

A new rubber fender for trucks, truck docks, marine vessels, and various industrial applications is introduced by Goodyear Tire and Rubber Co. The new fender absorbs any shock load created by a docking truck or



vessel. It is produced in a shape which prevents vehicle snagging. It is built with a flat base, tapered sides, and rounded front. It can be installed either horizontally, vertically, or diagonally. All hardware is protected by the fender. It can be supplied in lengths up to 19 ft.

Circle No. 38 on Card, Facing Page 55

Nickelplated Chain Lock

A lock with 36 in. of chain is suitable for locking such things as carts



to a stationary object. It can fasten gates, cages around machinery, or lock motors. The chain lock is offered by Hamilton Import Corp.

Circle No. 39 on Card, Facing Page 55

Grease Sealed Caster

A new grease sealed caster introduced by Jarvis and Jarvis, Inc., provides complete protection of both upper and lower raceways as well as the wheel bearings. Grease sealed



throughout, this type caster comes with stem or standard plate. Pressure grease fitting guards against dust, dirt, lint and abrasive powders. Grease seals hold protective grease and purge old grease to make way for fresh.

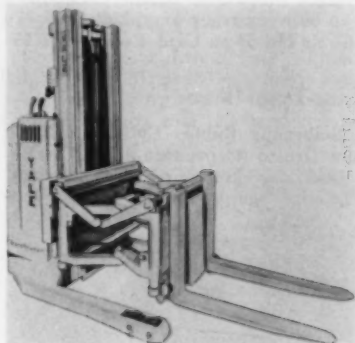
Circle No. 40 on Card, Facing Page 55

S and EQUIPMENT

ON PLEASE USE READERS' SERVICE CARD • • PAGE 55

Extend-A-Load Truck

The forks and carriage of this 2000, 3000, and 4000-lb capacity, narrow aisle, electric lift truck are moved forward and backward hydraulically in a pantograph fashion when picking up and depositing a load. This fea-

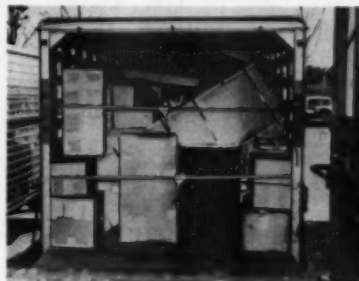


ture saves valuable floor space. It eliminates the need to straddle the bottom load with outrigger wheels and permits closer placement of stacks. The pivoted arms which control the movement are arranged parallel to the ground. Truck is offered by Yale and Towne Mfg. Co.

Circle No. 41 on Card, Facing Page 55

Cargo Locking Device

An easily installed cargo locking device for trucks and trailers is now available from S and H Supply Co. The device has a friction jack and is

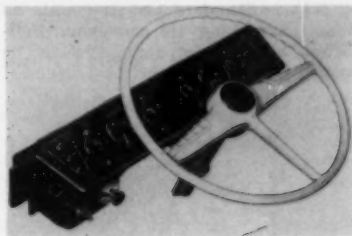


installed between body sides. Units are steel with heavy rubber pads on each end. Closed, the device is 6 ft 8 in. long. It extends 16 in. more when opened.

Circle No. 42 on Card, Facing Page 55

Dash Instrument Cluster

The new instrument cluster on General Motors, Inc., highway tractors involves new and modern design. Increased visibility and accessibility result. There are two separate instrument panels with individual clusters and printed electrical circuits permanently sealed to render them impervi-

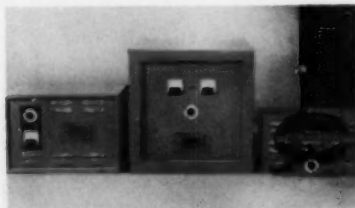


ous to shock or vibration. The two elements are clipped into place firmly, but can be removed in seconds. Clips are depressed and the units pulled out of the dash. A multi-contact plug can be pulled from a socket for complete electrical disconnection of the sub-assembly from the dash when desired. A typical unit will carry a speedometer, air-pressure gage, oil-pressure gage, and warning lights.

Circle No. 43 on Card, Facing Page 55

Eight-Hour Battery Charge

C and D Batteries, Inc., has this trio of silicon chargers for 24-volt industrial truck batteries. The center model can charge 12-cell, 24-volt batteries with up to 600 ampere hour



capacity in eight hours. On the left is the charger designed for eight hour charging of six-cell, 12-volt batteries with an ampere hour capacity up to 450. The small unit on the right provides an overnight charge for six-cell batteries.

Circle No. 44 on Card, Facing Page 55

Expanded Fork Truck Line

Allis-Chalmers Mfg. Co., Tractor Group, has expanded its lift truck line to include a 3000-lb capacity model. Designed and engineered to provide maximum maneuverability, the new unit is ideal for use in narrow aisles. Two transmissions are available: the standard two-speed constant



mesh and the optional power-shift torque converter drive. The standard transmission gives 10 mph speeds, power-shift gives speed up to 10.5 mph. The truck is equipped with an extra lift roller mounted design mast that provides maximum stacking height with a minimum overall lowered height and greater free lift.

Circle No. 45 on Card, Facing Page 55

Two-Way Radio

Speeding deliveries, eliminating backtracking, and improving service is a two-way radio from Morrow Radio Mfg. Co. It operates on the



citizens band, the new band assigned to public use by the Federal Communications Commission. Its use requires no technical examination of the operator. The two-way radio provides communications up to a range of 30 miles.

Circle No. 46 on Card, Facing Page 55
(Please Turn Page)

New Products and Equipment

(Continued from Preceding Page)

Cushion-Tire Lift Trucks

A series of redesigned cushion-tire lift trucks of 3000, 4000, and 5000-lb capacity is announced by Hyster Co. By elimination of hand shift levers, the driver's left hand is available for full-time steering. A right-foot pedal



provides forward-reverse selection. Self-adjusters in brake line circuit automatically maintain proper shoe to drum clearance throughout lining life. New hydraulic pump gives lift speed under full load up to 68 fpm for the Space Saver 30 and 40, and 53 fpm for the Space Saver 50.

Circle No. 47 on Card, Facing Page 55

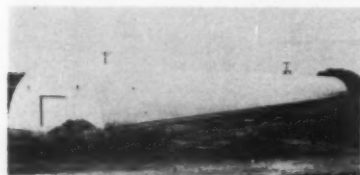
Latex Cement Patching

A quick, self-curing latex patch product for repairing problem spots in concrete or masonry is announced by The Flintkote Co. It assures a tight, non-shrinking bond. Toppings are not brittle; shrinkage is reduced to a minimum. No primer is required. A trowel or spatula will facilitate application.

Circle No. 48 on Card, Facing Page 55

Air-Supported Building

Schjeldahl introduces this new building made of heat sealable polyester film and reinforced nylon scrim. The structure can be obtained in unlimited length. Width is 60 ft maxi-



mum. It can be constructed on bare ground or any type of standard footing or slab that provides efficient air seal. Air pressure differential is equal approximately to the difference between the first and seventeenth floors of an office building.

Circle No. 49 on Card, Facing Page 55

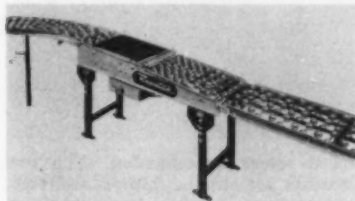
Adhesive Foam Tape

Polyurethane foam tape is available with permanent pressure-sensitive adhesive. It is coated with high temperature adhesive that, according to its maker, Richards, Parents, and Murray, Inc., will hold in place in spite of extreme temperature fluctuations from zero to 300 deg. F. The polyurethane and adhesive are non-corroding and impervious to moisture. Other qualities are sound and heat insulating, cushioning, and dirt resistance.

Circle No. 50 on Card, Facing Page 55

Flow Control Register

A flow control register for counting cartons, cases, and boxes is announced by Rapids-Standard Co. It counts as items pass along via conveyor. Individual objects do not have to be spaced on the conveyor. A trigger is

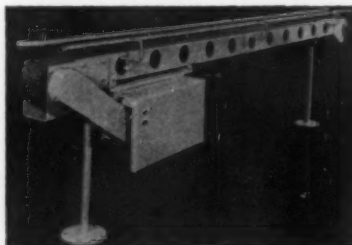


depressed and an electrical impulse is generated for each passing item. The method eliminates double counting and may be accomplished with items back to back as long as the acceleration from the trigger finger permits resetting of the trigger finger.

Circle No. 51 on Card, Facing Page 55

Can, Jar, Bottle Conveyor

M-H Standard Corp. has a conveyor for handling bottles, jars, and cans. It offers quiet, high-speed action without lubrication. It has nylon track

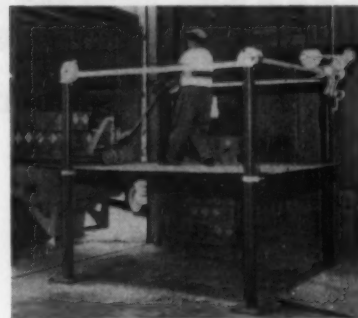


under both load and return sides of the belt. The conveyor is available in widths of 3½, 4, 4½, 6, and 7½ in. It can be equipped with stainless steel or nylon belts. All sections are standardized for interchangeability to allow layout changes.

Circle No. 52 on Card, Facing Page 55

Electric Loader

Illustration shows the Globe Hoist Co. loader used as a loading lift. It makes possible the use of palletized loads of small packages. It eliminates



increased manpower during the loading cycle. A 1-hp motor powers the unit. Rising height is 5 ft 6 in. Hinged throw-over bridge plate spans gap between truck and platform.

Circle No. 53 on Card, Facing Page 55

Lug-Type Tire

Seiberling Rubber Co. has added a new tire to its product line. It is designed for heavy highway service. The tire has a combination of fea-

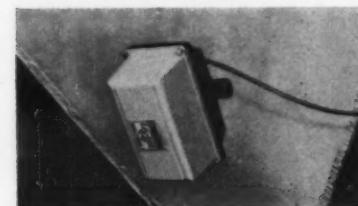


tures to provide long wear. It is constructed with nylon cord for protection against heat. The tire's tread is wider than usual lug-type tires. Extra rubber has been added to the shoulders.

Circle No. 54 on Card, Facing Page 55

Heavy Vibrator for Bins

Eriez Mfg. Co. has a bin vibrator available in two types. One is the impact type in which vibratory out-



put is in the form of steel on steel. The other gives cushioned impact. The new addition is for use on bin walls of ½ in. maximum thickness with a capacity of 50 cu ft.

Circle No. 55 on Card, Facing Page 55

Black Top Sealer

A new seal which offers protection and extends life of asphalt pavement



is available from The Monroe Co., Inc. It can be applied with brush or squeegee. It makes an easy-to-clean surface. Large areas can be sprayed. Circle No. 56 on Card, Facing Page 55

Fire Fighting Sphere

Resembling a bright red cannon ball, Ansul Chemical Co.'s multi-purpose fire extinguisher features a spherical design and one-hand operation. The shape of the 2½ lb dry



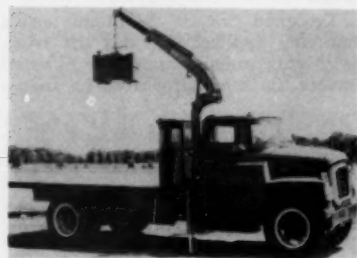
chemical fire fighter permits it to be placed in almost any location. The spent cartridge can be replaced instantly. The owner can determine the proper charge of gas necessary by weighing the unit. No pressure gauge is needed.

Circle No. 57 on Card, Facing Page 55

For prompt service, use postage-free postcard provided to obtain **FREE LITERATURE** and **NEW PRODUCT** information described in this issue. All material is **FREE** unless otherwise noted.

Truck-Mounted Crane

This crane doubles the use of a flat-bed or dump truck. It allows one man to load or unload a truck in a few minutes. Slewing gear provides precise positioning of capacity loads. The



crane mounts in a 13-in. space between cab and truck bed. Two safety valves prevent overloading. Two hydraulic legs prevent tipping and stress on truck frame and springs. Lifting height reaches 21 ft. The crane is offered by Focowil Corp.

Circle No. 58 on Card, Facing Page 55

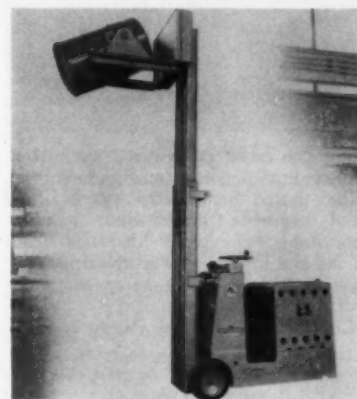
Light Freezer Clothes

Urethane foam has made new developments in freezer clothing possible. Lightweight, flexible, and strong, the clothing has improved heat retention powers. In the growing refrigerated warehouse industry such interlined clothing provides utility and comfort. The foam has no tendency to bunch. National Aniline Div. is the manufacturer.

Circle No. 59 on Card, Facing Page 55

Clamping Forks for Drums

An attachment that stacks, transports, and dumps barrels and drums is offered by Lewis-Shepard Products, Inc. It adds versatility to any fork



truck. The attachment handles wooden barrels and steel or fibre drums through clamping pressure. Their contents are dumped by hydraulic tilting action. Objects handled can vary from 18 to 16 in. in diameter and be tilted up to 180 deg forward. Circle No. 60 on Card, Facing Page 55

Shockless Trailer Hitch

A new shockless trailer hitch has been developed by Western Unit Corp. It makes use of an air or vacuum system that holds the printle eye firmly in the coupling eliminating shock and rattle. There is sufficient freedom to allow the trailer to follow

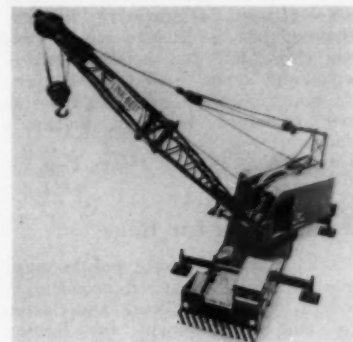


the towing vehicle easily. The drawbar triggers the top latch and automatically locks the drawbar within the hitch. After air is released, the hitch will remain uncoupled. The drawbar eye is held in raised position so that it slips over the printle. The driver can easily pull away from the trailer. This unit can be used to replace non-shockless hitches.

Circle No. 61 on Card, Facing Page 55

Yard Truck Crane

Link-Belt Speeder Corp. is introducing a 30-ton truck crane in the ¾-yd class. The crane has an 8-ft over-all width which makes legal



highway travel possible without a special permit. The machine has a total weight of 60,000 lb. The counterweight and both front and rear outriggers can be removed quickly. Separate sets of shafts, gears, and clutches permit individual power flow for all operations.

Circle No. 62 on Card, Facing Page 55

Hinged Pan Conveyors

The application of hinged pan conveyors in quench tanks, scrap movement, foundries, food processing, and machined part handling is offered by Anchor Steel and Conveyor Co. Drawings and photographs illustrate existing installations.

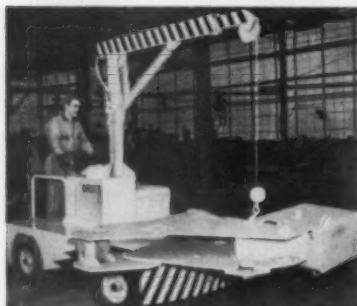
Circle No. 63 on Card, Facing Page 55
(Please Turn Page)

New Products and Equipment

(Continued from Preceding Page)

Tractor Crane

With finger-tip control, an operator can rotate the boom of this tractor crane 360 deg continuously, raise it from horizontal to 75 deg, extend or retract it. The crane is a product



of Drott Mfg. Corp. It has a capacity of 2000 lb. Dual acting controls permit various operations to be done simultaneously.

Circle No. 63 on Card, Facing Page 55

Sprayed Asbestos Fiber

New fire ratings have been announced for sprayed "Limpet" asbestos used on cellular steel floors, steel columns, and beams. Keasbey and Mattison Co. states, in its new offering, that the ratings are for one, two, three, and four-hour protection depending upon blanket thickness. The material consists of pure asbestos fiber combined with an inorganic binder.

Circle No. 64 on Card, Facing Page 55

Hand Truck for Bags

A hand truck for safe and damage-free handling of bagged products is offered by Nutting Truck and Caster Co. One improvement for lighter weight is replacement of a solid plate



steel nose with one of aluminum. It is non-slip surfaced for secure loads. Snap rings are used instead of cotter pins which might snag bags. It is available in 48-in. and 52-in. handle lengths.

Circle No. 65 on Card, Facing Page 55

Hydraulic Lift Truck

Designed for in-plant materials handling applications, this lift truck is highly maneuverable in limited spaces. It is manufactured by Indus-



trial Handling Equipment Co., Inc. Its built-in hydraulic system has wear resistant packings. Lowered height of forks is 3 1/4 in. and raised 8 1/4 in. Wheels pivot 90 deg in both directions. Units are available in either 2400 or 4400 lb capacities.

Circle No. 66 on Card, Facing Page 55

Logging Lift Truck

A heavy-duty logging lift truck with a capacity of 16,000 to 24,000 lb is available from Patrick Equipment Co. It has been designed to meet the needs met in handling logs and lum-



ber. The truck is powered by a Hercules liquid-cooled gasoline engine. The engine has center spark plugs and separate intake and exhaust manifolds. The truck has four-wheel drive and brakes, power steering, four speeds forward and four speeds backward.

Circle No. 67 on Card, Facing Page 55

Friction Wheel Strapper

A special heavy-duty friction wheel steel strapping hand tool has been developed by The Stanley Works. It is for use with cold rolled 1 1/4 in. by .031 and .035 steel strapping. The unit is light, but rugged enough to withstand usage required in produc-

tion line strapping of coils and sheet steel. A longer handle provides maximum leverage in tensioning strapping. Double pawl action makes it easier to get desired tension. Seal can be done to the front or the rear of the tool.

Circle No. 68 on Card, Facing Page 55

Narrow Aisle Stacker

A reach-type, narrow aisle electric fork truck 38-in wide is being introduced by Clark Equipment Co. The truck's power brakes are hand operated rather than foot operated. Power

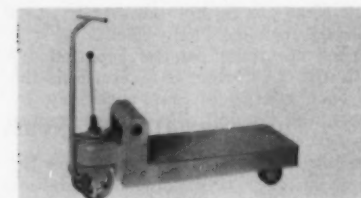


steering, dual operating controls, two-wheel drive, and automatic fork tilt are other features. Acceleration is smooth. The truck's capacity is 4000 lb at 24-in. load center. The truck has six speeds in each direction. Controls for braking, acceleration, and direction selection are housed in a single roller grip handle for right-hand operation. The same handle also controls lifting and lowering of forks.

Circle No. 69 on Card, Facing Page 55

Skid Lift Truck

Colson Corp. has a new light-weight skid lift truck. It is designed to reduce operator fatigue without capacity loss. The new truck weighs 245 lb with an open-type lifting frame



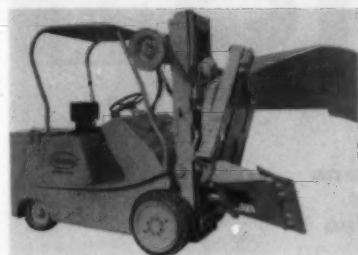
18 in. wide by 42 in. long. It has 5-in. under-clearance in raised position. The deck moves up and down almost vertically so that the load can be dropped very close to a wall or partition. The two lifting frame widths are 18 in. and 24 in. Lengths are from 30 in. to 72 in. in six inch increments.

Circle No. 70 on Card, Facing Page 55

Paper-Handling Truck

The difficult task of handling 5200 lb paper rolls from the narrow interiors of railroad boxcars has been simplified with an industrial truck

equipped with a revolving paper roll attachment. Automatic Transportation Co. is the manufacturer. A spe-



cial counterweight provides a truck which is 8 in. shorter than a standard unit.

Circle No. 71 on Card, Facing Page 55

Platform Hi-Lift

New platform truck from Barrett-Cravens Co. is ideal for stacking skids and boxloads of materials. It also

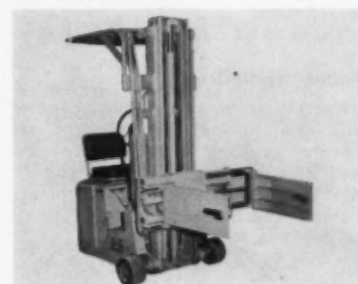


handles sheet stock or other bulky items not adaptable to pallets. The truck has capacities of 4000 and 6000 lb. It is available in all popular mast heights including telescopic. Only the drive wheel and transmission rotate with the steering handle.

Circle No. 72 on Card, Facing Page 55

Load, Bale Grab Arms

A new load grab with bale grab arms is now used by Lewis-Shepard Products, Inc. It is efficient for small warehouse use when light-duty bale handling is required. The minimum



overall truck weight and excellent maneuverability offered by this model make it well suited for operations in old style warehouses where floor loading capacities and maneuvering space often pose major problems.

Circle No. 73 on Card, Facing Page 55

Literature from the Advertisements

Listed below are brief descriptions of catalogs, brochures, booklets and other literature offered by advertisers in this issue of DISTRIBUTION AGE. To get your copies of the items offered, simply circle the appropriate number on the Reader Service Card, facing Page 55.

Jack-Knife Action

Jack-knife action solves the low under-clearance problem on pallet and outrigger trucks made by The Moto-Truc Co. Circle No. 1.

Air Freight Service

A booklet telling how United Air Lines Air Freight provides fast, low-cost service has been published recently. Circle No. 18.

Fork Lift Catalog

Lewis-Shepard Products, Inc., is offering its complete L-S Master Line Catalog. Circle No. 2.

Highway Routing Guide

Gordons Transports, Inc., is offering shippers free copies of its latest Routing Guide. Circle No. 19.

Details on Lift Truck

Allis-Chalmers' newest lift truck in the 2000-3000-lb class has outside turning radius of 67 in. Circle No. 3.

Security Service

Protection against fire, burglary, and other hazards is provided by American District Telegraph Co. Circle No. 4.

Lift-Truck Tires

B. F. Goodrich "wired" tires give five times the service of others assigned to lift trucks. Circle No. 5.

Equipment Replacement

The Clark Equipment Co. is offering advice on a planned equipment replacement program for materials handling. Circle No. 6.

Highway Van Trailers

Full information on the company's new Interchangeable Volume Van Line is available from Fruehauf Trailer Co. Circle No. 7.

Dunnage Cushions

Firestone Industrial Products Co. has prepared data on its dunnage cushions for cutting damage. Circle No. 8.

Close Shipment Control

Shipments on the Chesapeake and Ohio Railway are closely followed by CLIC, an all-teletype reporting system. Circle No. 20.

Lift Truck Transmission

Lamson Mobilift Corp. will supply the reader with details on its Mobil-Matic transmission. Circle No. 9.

Complete Line of Casters

From The Colson Corp's. list of over 2000 types of casters, users can pick the right caster for the job. Circle No. 10.

Motor Carrier Service

McLean Trucking Co. is offering "know-how" service on truck loads or less. For information, Circle No. 21.

Light-Weight Dockboard

Literature is offered by Brooks & Perkins, Inc., on magnesium dockboards, hand trucks, etc. Circle No. 11.

Elevating Tailgates

Elevating Tailgates in capacities of 1100 and 1300 are made by H. S. Watson Co. Circle No. 12.

Fork Truck Steering

Mobilift center line steering is featured in literature from Lamson Mobilift Corp. Circle No. 13.

Hand-Truck Casters

Bond Foundry and Machine Co. is featuring two single ball race casters. Circle No. 14.

Dock Board Bulletin

"Difficult Dock Problems and How to Solve Them," is a bulletin prepared by Magline, Inc. Circle No. 15.

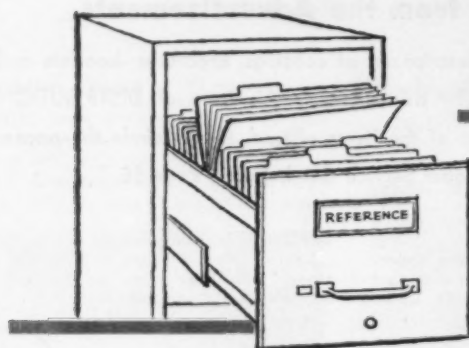
Free Subscription

Shippers, export managers, and traffic men are offered free subscriptions to Harbor Highlights by the Port of Long Beach. Circle No. 16.

Two New Lift Trucks

Automatic Transportation Co. is introducing its Crab and Elf lift trucks in new literature. Circle No. 17.

DISTRIBUTION AIDS



- Catalogs
- Specifications
- Directories
- Case Studies
- Reports

New Fork Truck Series

A new six-page folder on its new line of heavy-duty fork trucks has just been released by The Elwell-Parker Electric Co. The electric powered trucks are available in capacities from 12,000 to 20,000 lb. Free literature contains engineering information with dimensions and specifications. A special table compares features of the trucks with similar models. Truck components including drive and trail axles are covered.

Circle 74 on Card, Facing Page 55

Canvas Cushion Wheels

A four-page offering from Divine Brothers Co. is concerned with latest information on canvas cushion wheels. According to the folder such wheels are ideally suited for use on factory trucks where rough floors are encountered. The wheel is constructed with thousands of thread ends exposed to the floor surface. Blocks of new cotton duck are set radially to the rim and compressed into a solid mass.

Circle 75 on Card, Facing Page 55

Group Accident Twins

The American Casualty Co., has introduced group accident twins. They are a pair of policies which provide complete accident coverage for employee groups. Literature about the policies explains that the first policy is voluntary accident coverage, a new concept of protection in group accident insurance. It offers high-limit coverage with a selection of the amount decided on an individual basis. The second policy gives blanket protection for employees on company business trips.

Circle 76 on Card, Facing Page 55

TM Cuts Shipping Costs

How shipping handling costs were reduced at a New Jersey company is described in a four-page bulletin from the Oliver Corp. The traffic manager planned the conveyor installation to replace an "all hands" method of handling with a "no hands" method. The bulletin, fully illustrated, includes a floor plan showing one of the two conveyor lines in operation.

Circle 77 on Card, Facing Page 55

Reusable Shipping Containers

A 12-page brochure from DeVilbiss Metal Fabricators Co. has illustrations of metal containers designed, engineered, and built to effect major economies. The steel and aluminum containers are continuing to play an important part in the fields of electronics, aircraft, atomic equipment, and missiles and rockets.

Circle 78 on Card, Facing Page 55

BOOK

Package Design

It is a far cry from a jack-in-the-box to a jet engine, but both facing the rigors of transportation and storage require special pampering in packaging. That a shipping container is a personalized thing becomes clear in "Package Design Engineering," written by Kenneth Brown. Brown is a member of the staff of Space Technology Laboratories, Inc., and on the Technical Teaching Staff at the University of California. His book is the latest addition to his publisher's materials handling and packaging series. It is available from John Wiley and Sons, Inc., 440 Fourth Ave., New York 16, N. Y. Price: \$8.50.

Air Freight Routing Guide

A quick reference guide for routing air freight shipments from New York City has been printed by Mercury Air Freight, Inc. The wall-sized guide is designed to assist shippers in planning the routing of deliveries by listing the carriers which serve major cities throughout the world. Over 400 cities and 36 airlines are listed.

Circle 79 on Card, Facing Page 55

Steam Cleaning Guns

High pressure combination cleaners from the Malsbary Mfg. Co., are designed for heavy continuous use offering a 400 lb blast of steam. The units are used effectively by truckers, railroads, and plants where amounts of grit and grime gather. Various units are described in a brochure.

Circle 80 on Card, Facing Page 55

Port Facilities

Facilities available through the Port of Los Angeles are covered in a brochure and map recently made available. Pictures of the port's history along with a full description of its present situation may be found in the offering. A map of the port area will be of interest and assistance to shippers.

Circle 81 on Card, Facing Page 55

Touch Stenciling

Forty-nine marking jobs handled with ease through handprinters and labeling printing machines are covered in a brochure on touch stenciling. Weber Marking Systems points out that one mimeograph-type stencil can address 50 cartons a day.

Circle 82 on Card, Facing Page 55

The Complete Export

The Seven Santini Brothers has released a booklet on its complete export warehousing service from beginning to end. Processing, design, construction are described.

Circle 83 on Card, Facing Page 55

▼ For prompt service, use the postage-free postcard provided to obtain **FREE LITERATURE** and **NEW PRODUCT** information described in this issue. All material on these pages is **FREE** unless otherwise noted.

Marking, Sealing Shipments

A new 24-page booklet is offered by Marsh Stencil Machine Co. It explains how to stencil mark goods for safe delivery, which type of ink for specific marking jobs, three ways to stencil, conversion tables for weights and measures, export marking data, and a scale for measuring in inches and centimeters.

Circle 84 on Card, Facing Page 55



Low-Cost Car Liner

Ford Carliner Division has developed a car liner made of three sheets of tough impregnated, puncture resistant liner board; two panels of heavy corrugated board bonded to liner board and steel with adhesive; and three $\frac{3}{4}$ in. steel straps embedded in the heart of the panel. The liner has no protruding edges. It can be installed without costly shop time. It is resistant to cold, heat, and moisture. A folder describes liner characteristics completely.

Circle 85 on Card, Facing Page 55

Chicago Terminal Services

Terminal Services Division of North American Car Corp. is offering a leaflet on the Sag Junction Terminal. The literature attempts to introduce the company's Chicago services. The terminal, at Lemont, Ill., is 25 miles from the Loop. It is on Route 83 and provides direct non-stop connections with the Toll Road. The terminal has one mile of water frontage on the Cal-Sag Canal. The literature discusses in-transit storage, the Sanitary Ship Canal, Calumet Sag Channel, rail and truck service, and water transportation.

Circle 86 on Card, Facing Page 55

Low Bed Trailer

Low bed height, hitches, handling, four-wheel electric brakes are some of the points highlighted in a new folder from Locomotion Engineering, Inc. Illustrating a line of trailers for use with light trucks, the folder makes full use of photographs. Pertinent specifications are provided.

Circle 87 on Card, Facing Page 55

Battery Applications

C and D Batteries, Inc., will be glad to send copies of illustrative material in article form featuring its batteries "in use" at various points of operation. The handling of electric light bulbs, frozen foods, makes up the contents.

Circle 88 on Card, Facing Page 55

Radar Freight Service

Freight service from the Southern Pacific maintains efficient and rewarding results through the use of radar which makes maximum service possible in all types of weather. A profusely illustrated and captioned folder shows the radar service in operation.

Circle 89 on Card, Facing Page 55

BOOKS

Change Package Tester

Package cushioning tester design changes are described in a newly-released Air Force report. The publication, prepared at the Wright Air Development Center, discusses dropping-carriage redesigns for the platform-type tester. The report PB 1216-S, "The Theory and Operation of a Dynamic Tester for Evaluating Package Cushioning Material," is available from the Office of Technical Services, Dept. of Commerce, Washington 25, D. C. Price: 75 cents.

DA Truck Specifications

The DA Industrial Truck Specifications 1959-60 are off the press. Once again, reprints in handy booklet form are being made available to our readership. This year's edition includes vital specifications on some 1000 different models of industrial trucks. Included are end-loading or straddle carriers, high-lift fork and platform trucks, low-lift fork and platform trucks, non-lift platform trucks, towing tractors, and end-loading (shovel) trucks.

Single copies are available by writing The Editor, DISTRIBUTION AGE, Chestnut and 56th Sts., Philadelphia 39, Pa. Price: 50 cents. Quantity lots will be quoted on request.

New Air Hoist Line

Complete specifications, operating data, and accessory information on the new line of Yale and Towne Mfg. Co. hoists now is available. All critical dimensions of importance for installing the new hoists are detailed on a single page of schematic drawings. Individual photographs are used to explain features of various operating components. One page is devoted to a description of accessory equipment applicable to the air hoists.

Circle 90 on Card, Facing Page 55

Vibratory Feeder Catalog

Syntron Co. has published a new catalog on its vibrating feeders. The feeders are designed for finger-tip control and low maintenance feeding of bulk materials. The 32-page catalog contains descriptions and specifications of the company's line of feeders.

Circle 91 on Card, Facing Page 55

Record of Performance

The ability of lead-battery powered industrial trucks to get 20 to 30 per cent more work done than equivalent trucks with other power sources is documented graphically in one of two new bulletins offered by The Electric Storage Battery Co. Uniformly peppy performance of electric trucks at the end of a typical eight-hour work shift is demonstrated in graphs plotted during typical operations.

Circle 92 on Card, Facing Page 55

Time, Cost Record Book

To assist owners in determining the cost of owning and operating equipment, Caterpillar Tractor Co. has prepared a 24-page monthly time and cost record book. You can record day by day, each machine's expenses. A summary sheet is provided. There the totals for each month can be entered to obtain annual cost figures. Spaces are provided for quantity and cost of diesel fuel, gasoline, lubricating oil, grease, filters, hydraulic oil, repair labor, operator's time. Space is given for miscellaneous charges. To help compute operational costs, simple methods of calculation are contained in the last section of the book.

Circle 93 on Card, Facing Page 55

M-H Case History

How a major drug company maintains a standing inventory of over 15,000 items, handles warehouse processing smoothly, and combines receiving and shipping operations is covered in a booklet from Lewis-Shepard Products, Inc. The case history is illustrated with a series of action photographs. All phases of the operation are explained fully.

Circle 94 on Card, Facing Page 55

MHI Exposition Points Way To Better Handling Methods

PERHAPS the most dramatic announcement made during the recent Material Handling Exposition was that concerning a new schedule of regional shows.

Robert F. Moody, chairman of the Expositions Committee explained that the regional shows have been scheduled so that products will be taken to various markets instead of the markets coming to the products.

The schedule of regional shows as announced by The Material Handling Institute, Inc., calls for at least four and not more than six industrial materials handling equipment shows in the years 1960 and 1961.

Boston, Mass., will play host to the first show from June 6 to 8, 1960. It will be known as the New England Show and will be held in the Commonwealth Armory. The Kentucky Fair and Exposition Center, Louisville, Ky., will hold the Central States Show from November 8 to 10, 1960.

The Pacific Coast Show will be held in San Francisco at the Cow Palace. Dates are February 22 to 24, 1961. Philadelphia's Convention Hall will be used for the Eastern States Show on May 9 to 11, 1961.

Approximately 23,000 people attended this year's Exposition to see exhibits of 237 manufacturers who set the trends in the materials handling industry.

Addressing the 10th Anniversary Banquet of The American Material Handling Society, Under Secretary of Commerce for Transportation John J. Allen, Jr., sketched the advantages and opportunities for railroads, trucking

MHI does about-face in move to bring product to market through a series of regional shows scheduled to begin June 6, 1960, at Boston

lines, freight forwarders, terminal and warehousing operators, and others resulting from the St. Lawrence Seaway activity.

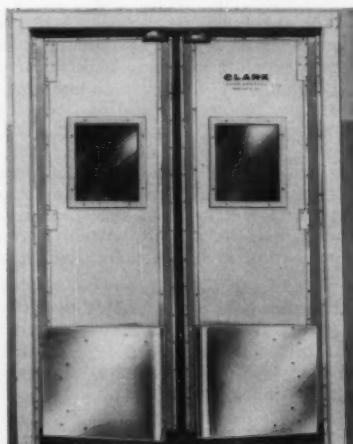
Relating Seaway activity to the materials handling industry, Allen said that "the transportation developments which I discussed . . . represent a real challenge to all of us working toward maximum efficiency and utilization in the movement and exchange of commodities.

"Materials handling is a pivotal factor in achieving greater effi-

ciency of our transportation facilities. Your organization will play an important part in keeping the sciences of cargo handling abreast of the improvements in transport capability."

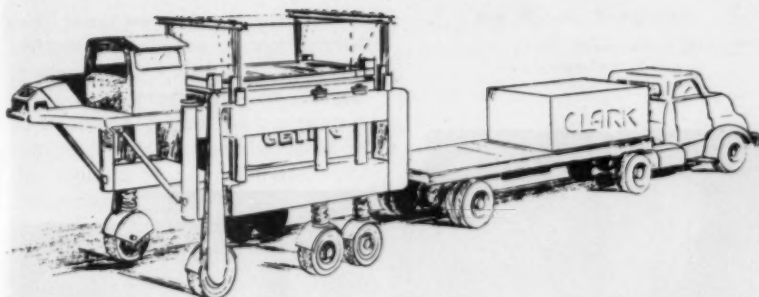
On these pages are some examples of developments presented during the recent Exposition. For additional information simply circle the appropriate number on the Reader Service Card facing page 54. Other show equipment was illustrated in the May and June issues of DISTRIBUTION AGE. ●

Shock absorber door by Clark Door Co. takes fork truck punishment
Circle No. 113 on Card, Facing Page 55

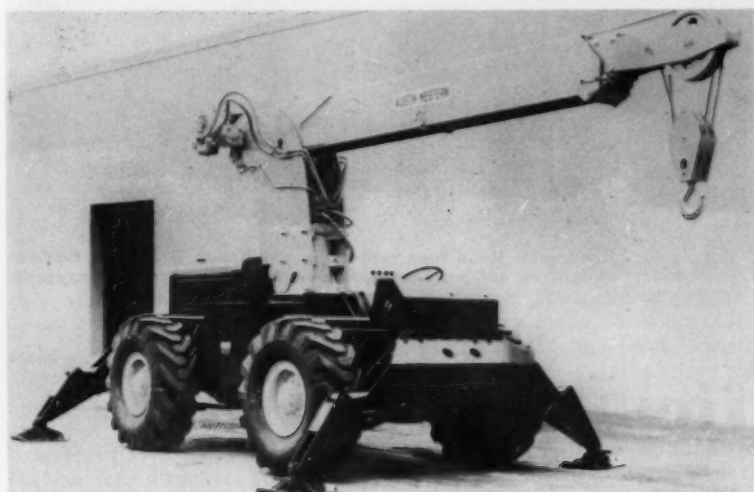


Brooks and Perkins manufacture this dock plate for light equipment
Circle No. 114 on Card, Facing Page 55



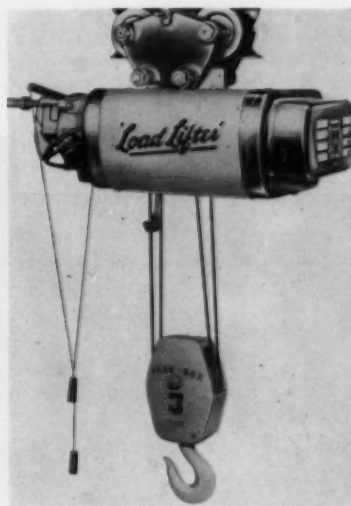


Straddle carrier which will stack cargo containers two high was introduced by Clark Equipment Co. Developed for work with containerized freight jobs
Circle No. 115 on Card, Facing Page 55, for more information



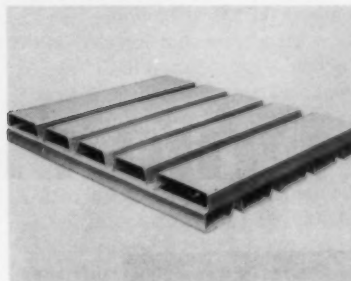
This was one of two new cranes introduced by Austin-Western. It operates easily in the 10-ton range. Boom extends 25 ft, retracts to 15 ft. It tilts
Circle No. 116 on Card, Facing Page 55, for more information

Baker Industrial Trucks exhibited its sideloading fork truck which unloads and loads itself, stacks and unstacks. It can stack loads up to 12-ft high
Circle No. 117 on Card, Facing Page 55, for more information



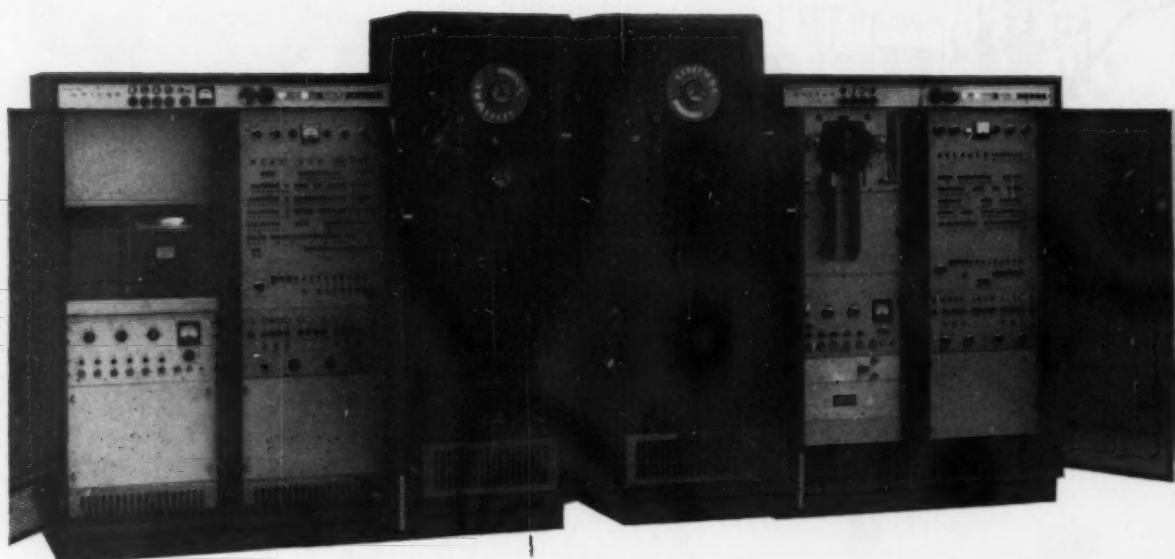
New line of air-operated hoists by Shaw-Box Crane and Hoist Div. here
Circle No. 118 on Card, Facing Page 55

Metal pallet allows four-way entry. Union Metal Mfg. Co. is the maker
Circle No. 119 on Card, Facing Page 55



Raymond Corp's, walkie stacker has 24 volt system. For narrow aisles
Circle No. 120 on Card, Facing Page 55





Remington Rand tape conversion equipment is used at Carborundum in order to convert incoming paper tape to magnetic

IDP Unifies Distribution

Integrated data processing keeps this company's distribution schedule at top efficiency with instant communications between company headquarters and three main district sales departments

THIS company took a qualified look at its distribution program and discovered that the inherent benefits from the installation of a modern integrated data processing system could solve many of its distributor weaknesses.

Before examining IDP results, however, let's take a look at what we set out to accomplish when the project planning was started about five years ago. First, a few words about the Carborundum Co. will help to orient you to our problem.

While we are a leading manufac-

turer of abrasive, refractory, electronic and nucleonic products, with operations organized in 31 operating divisions and subsidiary companies in 11 countries around the world, we are most generally associated with abrasives.

Corporate Divisions

To serve the abrasive market, we have three corporate divisions. Each is responsible for the manufacture, distribution and sale of its product lines: The Electro Minerals Division (abrasive grains and

powders); the Bonded Abrasives Division (wheels, stones, etc.); and the Coated Abrasives Division (sheets, rolls, discs, belts, etc.).

Serving these Divisions are 12 combined warehouses and sales offices throughout the United States. The headquarters of these divisions—and of the company are in Niagara Falls, N. Y. That is where our communications and computing centers are located.

To meet the daily needs of our customers we stock over 30,000 separate products. In addition,

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each year, we make to order over 100,000 special products not carried in stock.

When our president, Gen. Clinton F. Robinson, joined the company a few years ago, he was impressed by the mountains of paperwork encumbering our operations. He also learned that—in spite of all the paperwork—facts and figures for proper management control were not available. Individual locations often were forced to operate without one knowing what the others were doing.

Robinson set out to standardize and automate our administrative processes. His goal was to put a halt to the rate of increase in administrative costs, provide better and faster information for all levels of management, and make possible better direction and control of the business.

Long-Range Program

Out of these concepts came a long-range program for integrating and mechanizing our paperwork—starting with customer orders and their related source documents and finishing with the annual report to the stockholders. In between are all the functions of order entering, inventory control, production planning and control, distribution, sales and market analyses, and accounting.

After detailed analysis of our procedures, we did a thorough job of charting the flow of data

By W. A. Ferguson

Manager, Data Processing Branch
Carborundum Co.

through all functions of the business.

We saw that all actions traced back to only five types of original source data:

1. The customer order—which generates all other activity.
2. Manpower data—as reflected in payroll records.
3. Materials, supplies and services—as evidenced in purchase documents.
4. Physical assets—as shown by capital appropriations and related records.

5. Master information records—as evidenced by such things as customer files, product catalogs, price lists, etc. (i.e., those things which must be a matter of record for a company to do business).

It became evident to us that if we could standardize and mechanize the recording and processing of these few types of source documents, we would be well along the road to having completely automated and integrated our paperwork systems.

We then designed the fundamental operating procedures and recommended the equipment necessary to do the mechanization job. We decided to concentrate our initial efforts on the three abrasive divisions.

We began with customer order processing—providing a foundation upon which we could build our total system in sequential steps. It was not only the logical thing to do from a systems point of view, but it also offered us the opportunity to make significant and tangible improvements in customer service early in the game.

During the latter part of 1956 and early 1957, we received delivery of our equipment for input data recording at sales offices and plants; teletype equipment to transmit the information to Niagara Falls, and a computer system to process the data.

System Operation

When a customer order is received at one of our 12 district offices, the operation begins. Using prepunched customer and product paper tapes, sales orders are written for district office processing. Simultaneously, a paper tape record of the complete order is produced. It is transmitted on teletypewriter to the Communications Center at Niagara Falls. The receiving teletype equipment produces duplicates of the original tapes transmitted by the district.

During the day, the paper tape is fed into a paper-tape-to-magnetic-tape converter which records the order information on magnetic tape for further processing.

In order processing operations,
(Please Turn to Page 68)

Wheels that are ready for customers are stored in this block-long stockroom. Note orders in aisle are filled



Shipping department of the Coated Abrasives Div. of the Carborundum Co. handles, ships to all parts of U. S.



Part I—The Insulated Body

How to Choose Your Reefer Equipment

ABOUT THIS time of year, refrigerated trucks are groaning under the strain of peak service. Traffic managers, transportation managers, shipping supervisors, as well as owners of large retail and wholesale houses, distribution warehouses, and processing plants are groaning too.

Either business is better than expected and the reefers are too small, or there are not enough on hand. Heavy-duty service of the older models is creating maintenance and out-of-service headaches. Yet, months ago every one concerned was quite sure that the preparation for peak service was quite good.

Many of the above problems started with improper selection of reefer equipment in the first place. The problems concerned with the proper choice of bodies and refrigerating units can become very technical. If you, as the buyer, do not understand the meaning of K factors, btu's, engine-powered alternators, condensers, evaporators, and such—you are in trouble. Your chances of getting the proper and most efficient reefers are poor.

While this technical language may seem frightening to the layman, it actually is no more difficult to master than, say, traffic nomenclature. This article and the one to follow—refrigeration

systems—reduce technical terms to simple language. Combined they will provide a handy, abridged reference manual on highway reefer equipment.

When you buy a body for a refrigerated vehicle you have one basic goal: To select a unit which will keep out heat at the lowest total cost.

Total cost has several elements. It will help if you think in terms of spending four things:

1. Money—this includes your purchase price plus maintenance and operating costs for the body over its life.

2. Space—this will be spent mainly on the thickness of insulation you need. It affects payload capacity, so on light density cargo it can be of major importance.

3. Weight — again, you want maximum payload, but not at the expense of cargo protection.

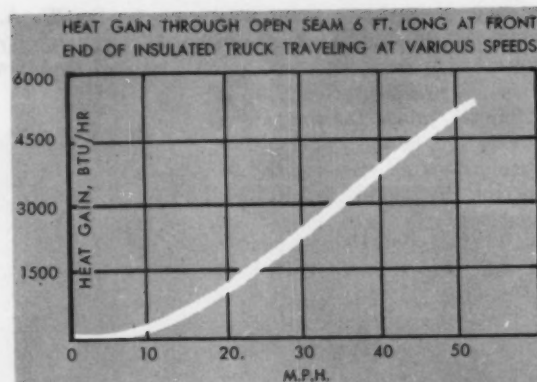
4. Heat resistance — this depends on your cargo. It's often the controlling factor, since the basic job of the refrigerated vehicle is to get the cargo to its destination at the right temperature.

Space, weight, and heat resistance can be expressed in terms of money. That's one of the tasks you'll face before you're ready to choose a specific body. But before you get that far, there are several facts to consider. With these you'll be able to balance how much of each element you need to spend to get the best combination.

Heat resistance needed determines many of your decisions. It can be considered in two phases . . .

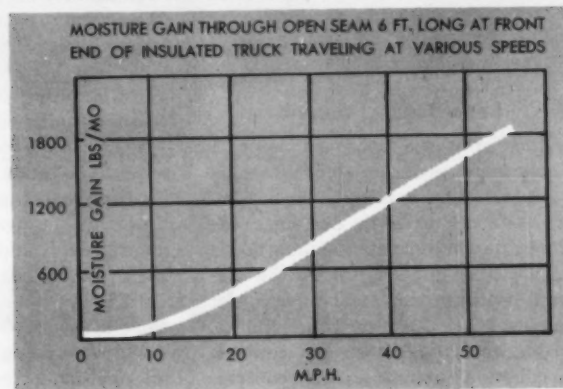
1. The amount of heat you have to keep out.

2. The ability of the body and



Recent studies disclosed need to seal body to eliminate entrance of air and moisture. Graph above shows added heat that cooling system must absorb when a leak occurs

The chart below, while based on an exaggerated example, does illustrate payload loss in pounds per month due to the amount of moisture driven into body's insulation



You need sound knowledge of K factors, engine-powered alternators, condensers, and btus if you are in today's market for reefers. Here are terms, facts explained

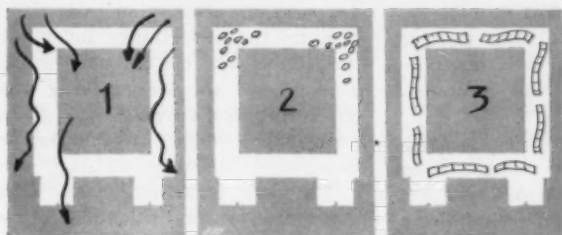


Illustration above concerns losses from leakage: 1. warm air comes in, cool air goes out; 2. warm air forms ice in insulation after condensation; 3. ice produces sagging

The illustration below, 4., shows warm air entering the trailer and forcing cool air out. Warm air and cool produce harmful condensation. Ice, 5., shown in corners



the insulation materials to do the job.

Heat Resistance

Here are the principles of heat resistance:

1. Heat is a form of energy. It moves from a warm surface to a cooler surface. It moves faster through some materials than others.

2. Heat is measured in British thermal units. A btu is the amount of heat needed to raise the temperature of 1 lb of liquid water 1 deg F in 1 hr.

3. A material's ability to resist heat is called its K factor. By definition this is the number of btu's that will pass through a piece of material which is 1 sq ft in area and 1 in. thick in one hour when there is a temperature difference of 1 deg F between the two surfaces of the material. The

lower the K factor, the better the insulation quality.

4. Heat enters a cargo compartment in three ways. It is transmitted through the materials used in the body. It is carried in air which enters through holes in the body or through the door when it is opened. It is given off by the cargo itself through the natural process of respiration.

5. In addition to heat, air carries moisture. The warmer the air, the more moisture it carries. When it stays in the body, water adds weight and reduces the heat resistance of the material in which it's carried (see charts).

Required Temperature

To measure heat gain you have to know the cargo's required temperature and the highest outside temperature on the route. Since potential heat gain is highest

with a frozen cargo, let's assume a cargo level of 0 deg F. Assume an outside temperature high of 100 deg F. This is not extreme. Studies show the temperature at the body's outside surface may be up to 25 deg F higher than the surrounding air temperature.

By subtracting inside temperature from outside temperature, you get the temperature difference. This is a basic figure. While it can be used in calculating the heat resistance needed by the walls, it is too low for the floor and ceiling.

For the floor, one equipment supplier adds 10 deg F to the basic figure. This allows for engine exhaust heat and radiated heat from the road. For the roof, the same company adds 20 deg F to the basic figure to counteract effect of direct sun if the unit is to be used in a sunny area. We now have temperature differences of 100 for the walls, 110 for the floor, and 120 for the roof.

Taking the walls first, consider 1 sq ft of surface. Say it has 6 in. insulation with a K factor of 0.250. Multiply the area (1) by the temperature difference (100) by the K factor (0.250) then divide by the thickness (6) and you get a heat load of 4.16 btu per square foot of wall surface.

For the floor and roof, with four inches of insulation with the same K factor, you get a heat load of 6.88 btu per square foot of floor and 7.50 btu per square foot of roof.

So, in a body with 300 sq ft of wall surface and 100 sq ft each of floor and roof, there is—in one hour—transmitted a heat load of 1248 btu through the walls, 688 btu through the floor and 750 btu through the roof. Total for the body: 2686 btu per hr.

But this is still an intermediate figure. It does not allow for heat entering the body through the frame-work, or heat in air entering the body through leaks or when the door is opened.

A 10 per cent allowance can be used for heat passing through the frame-work. That ups the hourly load to 2955 btu. Effect of air leaks varies with the speed of the vehicle, so we'll assume the

(Please Turn to Page 73)

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yellow pages of your phone book

... Guaranteed Rates

(Continued from Page 29)

point, it would seem that there are two important questions to be answered in order to determine its future:

1. Would guaranteed rates be legal under the Interstate Commerce Act and the Anti-Trust Acts?

2. Is it likely that new legislation would be introduced if it were determined guaranteed rates violated the Anti-Trust Acts or if they violated the intent of the Interstate Commerce Act?

To determine whether guaranteed rates were in violation of either the Sherman Anti-Trust Act or the Clayton Act would require a major fact finding procedure beyond the scope of this analysis. However, there is a precedent. It is federal reaction to the dual rate proposal of the international water carriers.

In this instance, the government enacted the Webb-Pomerene Act of 1918. International water carriers were permitted to engage in dual rate practices through conference agreements. This gives some weight to the argument that dual rates might have been regarded as actions in restraint of trade. The passage of the Reed-Bulwinkle Act in 1948, legalizing rate bureaus for rail carriers, also indicates that Congress considered special permission for certain rate setting practices necessary.

The passage of the Webb-Pomerene Act and the Reed-Bulwinkle Act also gives evidence that Congress will act to legalize certain rate making practices. In the above cases, the bills had recommendations from the ICC, a large segment of the carriers or the shipping public.

Very likely Congress would grant legal permission to indulge in guaranteed rates if they were widely supported.

The question of whether or not guaranteed rates would be considered contrary to the intent of the Interstate Commerce Act is an equally difficult legal maze. It is quite certain that guaranteed rates would not be considered discrim-

inatory under Section 3 (1) of the Act. This section states among other things:

"It shall be unlawful for any common carrier subject to the provisions of this part to make, give, or cause any undue or unreasonable preference or advantage of any particular person, company, firm, corporation, association. . . ."

Since the opportunity for guaranteed rates would be made available to all shippers moving the given product between the given points, they would probably not be considered discriminatory.

The key legal questions with reference to the Interstate Commerce Act evolves around the policy section of the act. The ICC is directed to preserve the inherent advantages of each mode of transportation.

It also must assure the nation of a transportation system adequate to meet the needs of commerce and defense.

The ICC has consistently looked with misgiving on any act of a carrier under its jurisdiction which seemed to result in destructive competition. This probable result of guaranteed rates will cause the Commission the most concern. The application of guaranteed rates by a rail carrier would be followed by an identical retaliatory act by its competitor. Should retaliation on guaranteed rates blossom out into rate wars on an industry level, the damage could be catastrophic. In the area of this state of conflict between the policy provisions of the Interstate Commerce Act and the likely result of large scale application of guaranteed rates lies the "achilles heel."

In view of this threat to the transportation system, it can be expected that the Commission will only authorize guaranteed rates under very limited circumstances. These will be cases in which the assured volume of bulk products will so reduce costs as to justify application of the new rates. ●

(Resume Reading on Page 30)

*The Interstate Commerce Act, Senate Document No. 72, Section 3 (1), p. 18, November 1, 1951.

... Ocean Rate

(Continued from Page 35)

The cargo must be transported to and from the ship by means of harbor craft known as lighters.

- Special deliveries or loading points call for extra operating expenses, much like switching charges for railroad freight. If a sufficient volume of traffic is offered, common carrier shipping usually will call at several loading or unloading areas in a given port and at no extra cost to the customer.

- Fixed charges, such as interest on indebtedness, rentals, and other fixed charges must be covered in the freight rate. This is true of other types of transportation also.

- Insurance on hull, workman's compensation and other insurance must be covered in freight rates.

- Port facilities cost a ship operator what amounts to a parking fee, only it is called berth fees. If the port facility is owned by the operator, there are fixed costs.

- Port regulations—hours of transit. If a ship arrives in a port at hours of the early morning when facilities for piloting, towing and berthing are not available, this constitutes lost time that must be accounted for in rates.

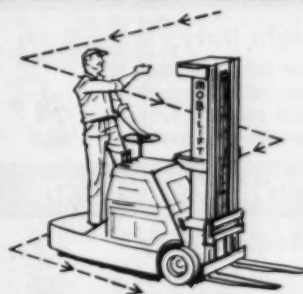
- Port charges and dues of every nature must be covered. These include tonnage taxes levied by governments and any other port dues that may be assessed.

- Canal tolls are big cost items on routes that require transiting canals. A loaded ship transiting the Panama Canal pays several thousand dollars for this service. In view of the time and distance saved by using the canal, this is a good investment.

- Port location is a cost factor that must be included in rates. Ports located on rivers, perhaps hundreds of miles from the ocean, require extra time. This cost must be paid for. Generally, except in specific commodities, such charges are not levied against ports that are so situated but are included somewhere in the cost calculations. •

(Resume Reading on Page 38)

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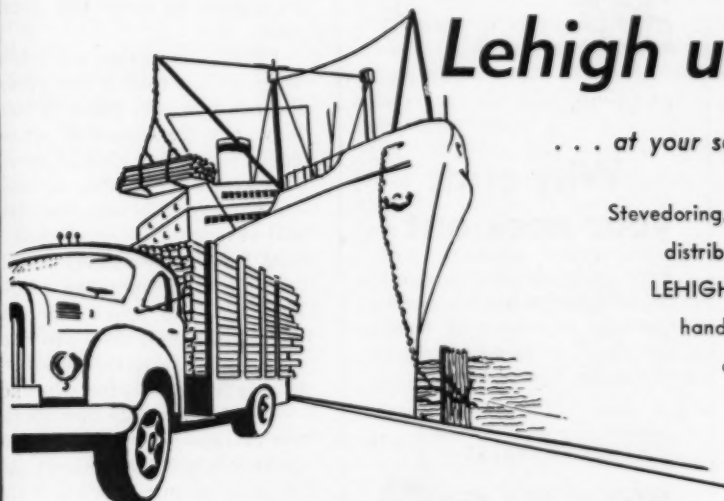
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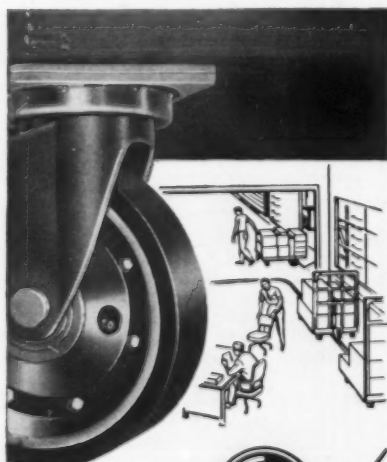
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... Refrigerated Warehouse

(Continued from Page 33)

over his production. He is able to purchase his raw materials and plan his output to keep more closely in step with consumption.

"At Secaucus, we will be in a position to effect very real economies for concerns of this type. It will make it possible for them to operate on what will amount to a continuous-flow basis from preparation right through to distribution. This will eliminate handlings and, in some instances, extra truck movements. We anticipate that this will become a key function in the very near future."

Has your experience with the type of distribution service you are supplying in three centers led you to any conclusions as to essential factors in making it effective?

"Obviously, our first obligation is to provide the proper environmental conditions for product protection

while in storage, order selection, and in transit. Important, too, is an efficient, well-equipped organization; including the office, warehouse, and drivers. In addition, we have found three other factors that are vitally important in the economics of frozen food distribution. These have to do with location, space and volume.

"Location and space are closely related. The only practical location for a distributing operation is on the fringe of a metropolitan center.

"However, regardless of the care with which we locate our plant and the adequacy of the facilities, volume is, in the final analysis, the crux of low-cost service. We find, for instance, that the economic service area in the New York metropolitan district lies within a radius of 100 miles from the base of operations.

"Our type of distribution is predicated on sort of a cooperative basis, making possible the use of the most advanced office techniques and modern methods for handling the products of several principals. In a sense, we might call this mass distribution. Like mass production, it is dependent upon sufficient volume to utilize both personnel and equipment to their full potentialities.

"We are not being entirely selfish when we say that in any given local distribution area there is room for only one refrigerated warehouse dedicated to this kind of service. If the available volume is split up among several houses, the situation will revert to the conditions where each concern previously handled its own distribution. The efficiencies of large-scale operations are lost and, in the end, costs are bound to rise. Inevitably, this would result in higher rates for the service.

"I have cited our new service for the processor of prepared foods. I think you can take this as tangible evidence of our conviction that we should include distribution as part of our service, and that we are ready to extend it in any practical way to meet changing requirements of our customers." ●

(Resume Reading on Page 34)



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Basic Rules . . .

(Continued from Page 39)

The top changes a pallet into a crate and therefore, when material is used to protect the top of the lading or to secure the load to the pallet, the weight of this material must be charged for. An important prerequisite to this rule is that the commodity, after being skidded or palletized, must be handled by fork lift trucks. For example, no allowance will be made for skids on a 50,000 lb machine that a fork lift truck could not handle.

Rule 12. Mixed Packages. If one package contains more than one article, the applicable rating will be that provided for the highest classed article in the package.

This rule applies to both carload and lcl shipments. The rule also states that all the articles need not be specified on the bill of lading. On lcl shipments only one of the articles taking the highest rating or rate, and on carload shipment one of the articles taking the highest rating or rate, and one of the articles taking the highest carload minimum weight are shown. To take advantage of this provision a notation must be made on the bill of lading. It should read: "and other articles classified or rated the same or lower." It may be abbreviated as "RS or L."

Rail tariffs usually contain an exception to this rule. It provides that if individual packages or articles are loaded on pallets, platforms, or skids in mixed cars, they will be rated the same as if not loaded on pallets, platforms, or skids.

Rule 13. Minimum Charges Per Shipment. The minimum charge on a carload is \$28.60 and on an lcl shipment is \$2.30, subject to rate increases. On lcl there is an alternative minimum charge which governs if higher. If classified Class 100 or lower, the charge is that for 100 lb at the applicable class or commodity rate. If classified higher than Class 100, the minimum charge is that for 100 lb at the Class 100 rate.

For example, skeletons, in boxes, move on a rating of Class 200. Assuming that the Class 100 rate is \$2, the rate per cwt of skeletons would be \$4. If the shipment consisted of 60 lb, three alternatives would have to be considered in order to determine the minimum charge of this shipment.

Rule 14. Definition of Carload Freight. Carload ratings or rates apply only when a carload of freight is shipped from one station, on one bill of lading, in or (Please Turn Page)

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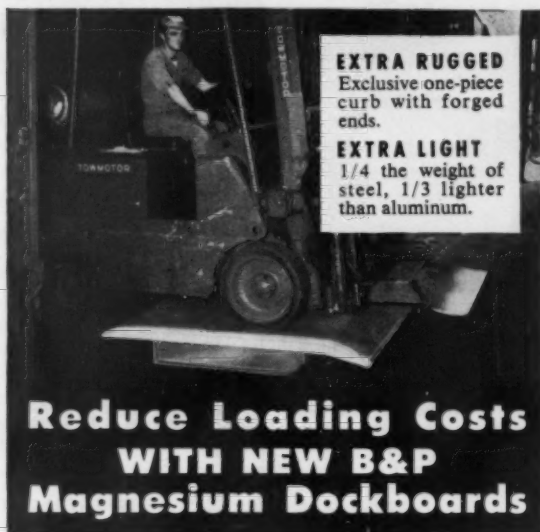
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Basic Rules . . .

(Continued from Preceding Page)

on one car, except as provided in Rules 24, 29, and 34, in one calendar day . . ., by one shipper for delivery to one consignee at one destination and is loaded by the shipper and unloaded by the consignee. The minimum carload weight is the lowest weight on which the carload rating or rate will apply

Although the validity of the provision seems questionable, this rule also provides that when freight is loaded in or on a car by the shipper and such car is not fully loaded but is tendered as a carload shipment, the shipment will be charged for as a carload. What would be considered "Tendered as a carload shipment" is not clear.

Rule 15. Less Carload Shipments Subject to Carload Charges; Carload Shipments Subject to Less Carload Charges.

"Section 1 (a) Except as provided in Section 2, the charge of an lcl shipment must not exceed the charge for a carload of the same freight at the carload rate subject to the carload minimum weight. The charge for a car fully loaded must not exceed the charge for the same lot of freight if taken as an lcl shipment.

"(b) Except where otherwise provided in tariffs of individual carriers, the provisions of this rule will not apply on shipments on which pick-up or delivery service has been performed, or on which an allowance has been made in lieu of pick-up or delivery service.

"Section 2 If a shipment tendered as lcl freight and loaded by carriers and unloaded by carriers is found to be subject to the carload rate and the carriers' tariffs do not provide that cost of loading or unloading is included in the C/L rate, a charge of 9 cents per 100 lb will be made for such loading and a like charge for unloading, such charge to be based upon actual weight of shipment."

This rule has been quoted directly from the rail classification.

It contains provisions covering two situations: one when the charges on an lcl shipment exceed the carload charge and another when the carload charge exceeds the lcl charge. From reading the first provision one might understand that, if a shipment were tendered to a rail carrier as lcl, the freight charges could not exceed the charge for a carload at the carload rate, subject to the carload minimum weight plus a charge of 9 cents per 100 lb. The ICC has not interpreted the rule that way.

The ICC has stated, "Rules 15 and 16 . . . were and are designed to prevent the performance for carload shipments of pickup and delivery services intended only for less-than-carload shipments. The imposition upon carriers of the burden of providing, generally and in any circumstances, facilities required for the handling of carload shipments in the same manner as less-than-carload shipments is not warranted, even though charges may be added for pickup, loading, unloading, and delivery services. Rule 15 contains a charge for the loading or unloading of carload shipments tendered as lcl ship-

New Piggy-Back Products



The growing list of commodities being shipped via piggy-back now includes automobiles. The ICC recently approved a tariff filed by the Frisco Railway to set up this service as a joint rail-highway movement between St. Louis and points in Texas and Oklahoma

ments, and as indicated in Rule 14 of the classification, there may be tariff provisions for loading, unloading, or split deliveries of carload traffic, but there is no provision for pickup or store-door delivery thereof. As indicated, rules 15 and 16 specifically exclude from the application of carload rates shipments given pickup or delivery service, or for which an allowance is made in lieu of such service."

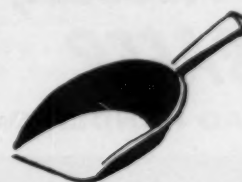
Consequently, if a railroad performs either pick-up or delivery service, the charges assessed must be the higher lcl charges. If the shipment is delivered to a railroad freight house, loaded, and unloaded by the railroad and picked up at destination by the consignee, the lower carload charges will apply plus 18 cents per 100 lb for loading and unloading.

The NMFC rule covering this situation reads differently. It provides that the charge for an lcl shipment must not exceed the charge applicable to the same shipment under the volume ratings at the volume minimum weight. This provision is applied without exception.

The second provision of this rule states that the carload charge may not exceed the applicable lcl charge. There is no problem with this provision. If the carload charge exceeds the lcl charge, the lcl charge applies.

But the NMFC does not contain a provision similar to the above rail provision. To cover this situation, most motor carrier tariffs provide that if the shipment moves on one bill of lading and fills the trailer to capacity, the volume rate at the volume minimum weight must be assessed. But it is interesting that a recent case [66MCC 237 (1955)] held such a rule potentially discriminatory and therefore unlawful. The ICC stated that the rates and charges assessed were unjust to the extent that they exceeded the less-than-truckload rate at the actual weight of the shipment. As a result of this case, some tariff publishers have revised their rules so as to be in accord with this ruling. ●

(Resume Reading on Page 40)



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IDP Unifies . . .

(Continued from Page 59)

performed every night, four basic records are maintained automatically: the master customer file, the master product file, the finished-goods inventory, and orders-in-process.

As the current day's orders are processed against those records, required data is selected from the master files and the inventory is updated and checked for availability of items not stocked at the originating district. Then the order information is finally recorded in the orders-in-process file.

Magnetic Tapes

Another result of the evening processing is to produce magnetic tapes containing all data necessary for the high-speed printer to record manufacturing and shipping orders.

As each warehouse and plant location makes shipment on an order, it transmits the shipping informa-

tion to the computer in the same manner as described for order entry. Such shipping messages clear the orders-in-process file and produce tapes for the writing of invoices.

An important result of processing orders and shipments is the historical record, retained on magnetic tape, of sales and inventory activity. The tapes are processed periodically to prepare sales and inventory reports and analyses and regular month-end accounting data.

Also we have adapted our payroll procedures to the system. Payroll source records are recorded on magnetic tape. Source data is processed against the master payroll records to produce tapes which, when printed on the high-speed printer, provide payroll checks and analyses. In addition, we have transferred our property records to the system. The computer is even being used for the solution of complex engineering problems by our Research and Development Division.

We have mechanized four out of the five types of original source documents. The fifth, purchase documents, will be picked up later in the chain of events as our logical progressing brings us to that point in the business cycle. However, this should not be interpreted to mean that we have gone four-fifths of the way to our long-range objectives.

Upturn

We reached a break-even point in our operations at the end of 1958. It was then that the total costs of operating the communications network and the computer center were being offset by reductions in clerical costs and by reductions in punch-card tabulating expenses.

The change-over was effected during a two-year period by careful planning with our Industrial Relations Division. By anticipating the effects of our program, we were able to reduce replacement hiring rates and let normal turnover take care of the reductions.

Temporary help was used to fill

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some jobs during the periods of overlap from one system to the other. In accordance with company policy, no regular employees were laid-off as a result of the program. As the project moves into the black, we will continue such planning and it is our goal to achieve savings in the next five years sufficient to recover our costs during 1956-57.

Improved Service

Perhaps the most gratifying results have been achieved in the area of improved customer service. In designing the new system, we looked primarily for an improved handling of those orders which could not be filled at the original district warehouse.

Previously, such orders were mailed to the plants at Niagara Falls where they got into a big paperwork mill and eventually wound up as orders on the plants to ship from plant stock or to be manufactured.

With no central inventory records, we had no way of knowing whether needed items were on the shelves of neighboring districts. Under the new system, orders are

fully censored at the district offices.

All orders teletyped to the computer center during the day are fully processed at night. Shipping documents or manufacturing orders are in the hands of the selected order filling locations before the start of business the next day.

Also, we have updated a complete, national inventory record and simultaneously checked it for the closest available stock of those items not being shipped by the original district.

Over and above this speed-up in order handling, we are gradually increasing the percentage of items shipped from stock on hand. This is being brought about through the availability of complete and current inventory data, which helps us to get the right items to the right places at the right times.

Other benefits are beginning to make themselves felt in our company operations. Accuracy in data handling is far superior to what we knew before, and the flexibility of the equipment allows us to absorb surges in volumes without falling behind even a day in our paperwork operations.

But next in importance to im-

proved customer service is the progress we are making in the area of management control. Facts are replacing guesswork — the electronic computer is a heartless monster when it comes to presenting facts.

We are just getting started in this area, but are now finding ways of measuring our performance, pinpointing our deficiencies, and presenting management with timely information on the status of our operations.

Long-Run View

Many of us feel that these by-products of the daily operating procedures will, in the long-run, make a far greater contribution toward improving the company's operations.

However, with a central billing operation, we still have some delays in getting invoices into the hands of our customers fast enough. But we are steadily overcoming obstacles through the co-operative effort of all elements of the organization. We are certain they can be overcome. ●

(Resume Reading on Page 60)

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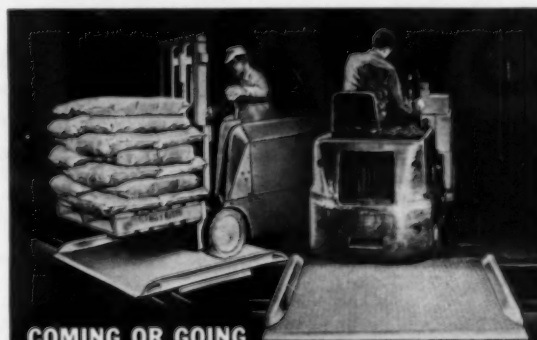


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By Leo T. Parker
Legal Consultant,
Distribution Age

WITHIN THE LAW

TRANSPORTATION

Does res ipsa loquitur hold if an animal is injured during its transportation to or from?

A higher court held recently that where an animal is injured during its transportation the doctrine of res ipsa loquitur is applicable. This generally means that the carrier is automatically liable.

For illustration, in *G— B— T— Co. v. W—*, 321 Pac. (2d) 248, the testimony showed facts, as follows: The *G— B— T— Co.* was hired to haul a number of horses. The company's trailer was equipped to haul horses, having partitions for the purpose of separating them. These partitions, however, were not used. The driver of the truck had complete charge of loading the horses. Upon arrival at the destination, the truck was seen to lurch and jerk as the driver maneuvered the truck through a gate; and the horses were heard screaming and floundering in the trailer. When the horses were unloaded, it was discovered that *W—*'s horse had a broken leg and had to be destroyed.

W— filed suit against the *G— B— T— Co.* which is a common carrier, and alleged that he was entitled to recover damages for three separate reasons: (1) under the company's liability as a common carrier, (2) by reason of its negligence, and (3) under the doctrine of res ipsa loquitur.

The lower court held in favor of *W—*; found the value of the horse to have been \$3000, and that *W—* was entitled to judgment for damages in this sum.

The company's counsel appealed to the higher court on the contention that *W—* could not plead three different reasons why he could recover damages but that he should have been compelled to elect one of his "three inconsistent theories."

The higher court approved the lower court's verdict, saying:

"Plaintiff's three counts were not

inconsistent. . . . The driver had complete control of the horses and the equipment, and they were in his exclusive possession during the entire trip. . . . Under the doctrine of res ipsa loquitur so long as the actual cause of injury remains unknown, proof of acts of negligence which may have been the cause is not inconsistent with the doctrine but actually supports the inference which the doctrine raises."

This court went on to explain that the driver's negligence may have been loading all the horses together instead of loading them separately between the partitions, or that negligence may have been the sudden lurching or jerking of the truck. In either event the doctrine of res ipsa loquitur was applicable.

What is the legal difference between excise and property taxes, is a "use" tax valid?

First, it is important to know that there is a material distinction between an excise and a property tax. An excise tax is imposed upon the doing of an act, so to speak.

A property tax is ordinarily com-

puted upon valuation of property and levied either where the property is situated or at the owner's domicile. Generally speaking, a "use" tax is valid unless its provisions are discriminatory. The fact that it must be paid within a specified period of time does not render the tax law invalid.

For illustration, in *H— v. S— Co.*, 4 S. E. (2d) 203, it was shown that a state law was enacted which provides that a certain tax shall be paid by every person within the state who takes possession of merchandise providing the sales taxes on the merchandise have not been paid. The law further provides that this "use" tax must be paid by the possessor of the merchandise within one hour after the merchandise is received. In holding the law valid, the court said:

"It is common knowledge that taxes are usually passed on to the consumer; and the evident purpose of this law was to prevent evasion, by placing tax upon the privilege of use. . . ."

Can a private carrier charge higher rates than those lawfully charged by a common carrier?

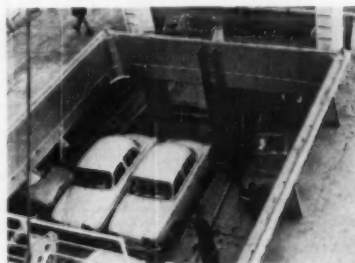
The general law is established that unless a private carrier has a contract with a shipper specifying freight rates, the carrier may charge any reasonable rates without consideration of the lawful rates of common carriers.

For example, in *C— v. L—*, 229 S. W. (2d) 266, it was shown that a private carrier transported merchandise and rendered a bill to the shipper considerably higher than freight rates charged by common carriers. The shipper refused payment, and the carrier filed suit.

In holding in favor of the private carrier, the court explained that although the shipper had paid to common carriers lower freight rates for the same service this evidence was not important.

This court explained further that private carriers are not obligated to charge freight rates based on rates charged by common carriers, or other

Cars Arrive at Port



Renault cars are arriving at Port Newark after shipment from Le Havre. Shipments of nearly 1100 cars are made aboard the European Trader and other ships by loading about 900 below decks in five levels. Another 200 are placed on deck.

private carriers, and unless a contract exists between the private carrier and the shipper stipulating the agreed freight charges, the private carrier may charge any reasonable rates.

WAREHOUSING

Are all bailees required by law to use the same degree of care to safeguard merchandise stored?

In order to quickly simplify the law it is well to state that there are only two classes of bailees. One class is the "paid" bailee, as a warehouseman, who receives compensation for the safekeeping and storage of merchandise. The other class is any corporation, firm, or person, including warehousemen, who accept merchandise for safekeeping without any compensation.

The higher courts require "paid" bailees as warehousemen to exercise "ordinary care" to safeguard stored merchandise, but a "free" bailee is not liable for loss, damage, or theft of merchandise accepted for safekeeping unless the testimony conclusively proves that this bailee was grossly negligent.

A warehouseman may avoid ordinary liability for loss of, or damage to, or destruction of goods stored in disregard of his normal contract with the bailor, owner of the stored goods, if the testimony proves that the warehouseman intended to violate his normal obligations, with implied knowledge of the bailor.

For illustration, in *M— v. S—'s M— and S— Co.*, 303 S. W. (2d) 17, the testimony showed facts, as follows: One M— stored his goods in a warehouse owned and operated by the S—'s M— and S— Co. The warehouse in which M—'s goods were stored burned and his goods were destroyed.

M— sued the S—'s M— and S— Co. for the full value of his destroyed goods, contending that the warehouse company was liable because an official of the warehouse company orally agreed to store M—'s goods in its fireproof warehouse located at Delmar Boulevard and violated this agreement by storing same in the H— warehouse, which was not fireproof.

During the trial the counsel for the warehouse company proved that its warehouse receipt showed that M—'s goods were stored in the non-fireproof H— warehouse.

The lower court held the warehouse company liable to M— but the higher court reversed the verdict. This Supreme Court held that the unsigned warehouse receipt and storage order form which showed that the goods were stored in a certain

Central-Control Dispatch System



A new central-control dispatch system has been installed by the Refrigerated Division of Ringsby Truck Lines, Inc. Thirteen major terminals between Chicago and St. Louis in the east and Los Angeles in the west now are linked with the Denver headquarters by private line telephone. Crews are required to check in at least every 16 hours on through runs

warehouse were admissible to prove that the owner of the stored goods had notice that his goods were stored in a warehouse which was not fireproof. The higher court said that although M— testified that an official of the warehouse company orally agreed to store M—'s goods in its fireproof warehouse and violated this agreement by storing same in the H— warehouse, yet this was not positive evidence that the warehouse company had violated its storage contract.

Hence, the law seems to be established that if the owner of stored goods has information from any source that his goods are stored in a non-fireproof warehouse, he cannot recover damages from the warehouseman on the claim that the warehouseman agreed to store his goods in a fireproof warehouse.

Therefore, in such a case the warehouseman, although being a "paid" bailee, is not liable for loss, destruction or damage to stored merchandise.

**If A is injured by B while
B is working gratis, is
B liable for damages?**

B is not liable in damages unless the testimony shows that the injuries resulted from his gross negligence.

For instance, in *Ba— v Bu—*, 149 N. E. (2d) 143, Massachusetts, the testimony showed facts, as fol-

lows: A man named Ba— was a truck driver employed by P— M— L—. One Bu— was employed by another company as a driver. Both Ba— and Bu— were on the premises of a warehouse terminal. Ba— had a trailer backed up to a loading platform with no tractor attached. Ba— asked Bu— to connect his tractor to this trailer and move it so that the doors could be locked. Bu— did this and Ba— was seriously injured due to Bu—'s negligence in backing the tractor. Ba— sued Bu— for heavy damages.

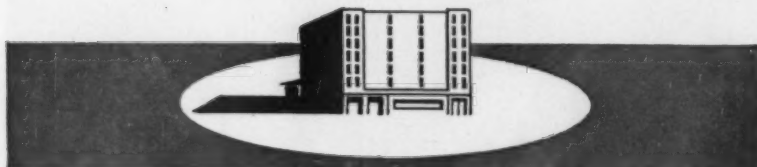
Since the testimony showed that Ba—'s injuries were caused by ordinary negligence, not gross negligence, of Bu— the higher court refused to hold Bu— liable. This court said:

"Defendant (Bu—) had entered upon a gratuitous undertaking for benefit of plaintiff (Ba—) and could not be held liable for injuries sustained by plaintiff (Ba—) upon showing of ordinary negligence."

This court explained that Bu— would have been liable in damages to Ba— if the testimony had proved that Bu— was grossly negligent. In this respect, the court said:

"There was here no evidence which would warrant a finding of gross negligence, which must be based on conduct of the defendant (Bu—) amounting to an 'aggravated degree of culpability'."

Warehouse SPOTLIGHT



NFFD Points to Necessity Of Robinson-Patman Change

The National Frozen Food Distributors Association recently appealed to the Anti-Trust Subcommittee of the House Judiciary Committee for passage of legislation to amend the Robinson-Patman Act.

Ellis Arnall, former governor of Georgia, acting as NFFD counsel, stressed the importance of the legislations acceptance. "This proposed legislation," he told the House, "would amend the Robinson-Patman law and . . . would require the packer, processor, and manufacturer to sell to wholesalers and distributors at a price which would enable the independent food merchant who buys the merchandise from the wholesaler-distributor to remain . . . competitive with the large direct-buying national chains."

Arnall pointed out that one insidious element in today's food distribution monopoly is that big national chains can buy food sources cheaper than small independent retail merchants.

—DA—

NFF Convention Set, Oct. 25

October 25 through 28 are the dates set for this year's National Frozen Food Convention and Exposition to be held at the Sherman Hotel in Chicago. A series of sales clinics are scheduled to prepare convention attendance for the "golden sixties."

Chelsea Prints First Edition

The initial issue of "The Vanguard" has been issued to employees and customers of Chelsea Warehouses, Inc. The paper's goal is to instruct and entertain the reader. The first copy illustrates some recent examples of modern moving techniques, philanthropic ventures, and safety strides.

Branch Managers' Meeting



Executives who attended the Annual Branch Managers' Meeting of the D. H. Overmyer Warehouse Co., in Tampa, Fla., to discuss operations and sales plans are pictured here. Back row: (l. to r.) J. K. Hines, general manager, Newark branch; John Hawley, general manager, Atlanta branch; Paul Herreid, vice president-finance; D. H. Overmyer, president; George Kerwin, vice president-sales; Robert Foy, general manager, Tampa; Samuel Cox, general manager, Memphis; Samuel Merchison, general manager, Cleveland; and Leonard Monohon, general manager, Jacksonville. Front row: (l. to r.) Robert Quinlan, eastern district sales manager; William Cehak, Midwestern district sales manager; David Pursell, Southeastern district sales manager; Allan Stewart, general manager, Toledo; and Robert Falter, assistant to the president

Lost Time Accidents Reduced To All-Time Low Says NARW

The National Association of Refrigerated Warehouses announced recently that its members have reached an all-time low in the frequency and severity of lost time accidents.

A. R. Carstensen, chairman of the Safety Committee, reported that lost time accidents for every million hours worked have been reduced from 39½ in 1950 to 25½ for 1958. Severity has been reduced to 367 lost days for every one million hours worked.

Safety awards were presented to 62 members who operated one or more consecutive years without lost time accidents. Outstanding among such winners were six year awards to Beall Refrigerating Co., Santa Clara, Calif.; National Ice and Cold Storage No. 4, Stockton, Calif.; and Polar Cold Storage Co., Sioux Falls, S. D.

U. S. Security Warehouse, Columbus, Ga., received a five year award. Four year awards went to American Ice and Cold Storage Co., Inc., Everett, Wash.; Eastern Market Cold Storage Co., Detroit, Mich.; Lyndonville Ice and Cold Storage Co., Lyndonville, N. Y.; and Madison County Cold Storage Co., Inc., Canastota, N. Y.

—DA—

An exhibit of more than 250 camping, sport, and picnic items under sponsorship of the Ford Motor Co., illustrates the comforts of station wagon living. The exhibit is being hauled to major U. S. cities by North American Van Lines, Inc., in three trailers.

—DA—

Men in the Spotlight

Arthur C. Kraus—named director, International Services, Wheaton Van Lines, Inc.

Frank E. Harris—new acting sales manager-U. S. North Zone, Aero Mayflower Transit Co., Indianapolis, Ind.

Vice Admiral Harold D. Baker, USN, Ret.—appointed vice president-general consultant, North American Van Lines, Inc., Fort Wayne, Ind.; Richard F. Newnam—named regional manager, Denver, Col.

... Reefer Equipment

(Continued from page 61)

body's air-tight. To allow for door openings, you can multiply the hourly load by 1.25 for one-stop intercity operation, 1.50 for light delivery service, 1.75 for medium-heavy delivery service, and 2.00 for heavy delivery service with many stops.

To use this body in heavy delivery service, therefore, you would need refrigeration equipment with a minimum capacity of about 6000 btu per hour. Here is where selection of the body and its refrigeration unit meet. Obviously, by keeping the body's heat gain down you can reduce the capacity you'll need in the refrigeration system.

Now a look at the other parts of the body which affect its ability to carry refrigerated cargo. These include the body shell and frame, insulation, flooring, and interior lining and hardware.

The greater the basic potential heat load, the more important it is that you choose an air-tight shell. One supplier estimates that heat and moisture infiltration can add 50 per cent or more to the total heat load, even in a new body. Other studies show that accumulated moisture can add several hundred pounds of deadweight to a body in a short period of time.

Few Joints

As a general rule, the best body shell will have the fewest joints and openings, and those it has will be properly vapor sealed. And it will have no metal parts extending directly from the outside to the cargo compartment.

Since wood offers more heat resistance than metal, a body with a wood frame will keep out more heat than one with metal posts. But to get this heat resistance, you have to spend more in weight and cubic capacity.

Other things being equal you will want the lightest shell. This will give you additional pounds to work with in selecting your other components. Other factors to consider in choosing the shell are its

potential life span and the ease and cost of repairing it.

Choosing insulation involves several decisions. What material? How thick? How much payload space or weight will it displace?

To be blunt about it, insulation manufacturers admit that so far there is no one perfect insulation material. But they are looking hard and there are some better materials, now in the experimental stages.

Three Types

In the meantime, you have three basic types of insulation to choose from (1) solid materials such as cork, (2) flexible, blanket-types such as fiber glass and (3) plastic foam insulation—either in blocks or "foamed" in place. Each has its own advantages and disadvantages. Here, for example, are characteristics of materials generally used in today's reefer bodies.

Glass fiber ranges in weight from about $\frac{1}{2}$ to $\frac{3}{4}$ lb per cu ft. Its initial cost is lower than foam and it is cheaper to install. Like foam, it is practically vermin and rot proof. Latest types tend to stay in place without settling and forming air pockets.

Low moisture resistance qualities are a major disadvantage. Glass fiber is relatively porous and requires some form of vapor seal. It is flexible, may need additional support structures to hold it up. It is fire proof and is in the same basic K factor range as plastic foam.

Foam plastic types weigh about $1\frac{1}{2}$ to 2 lb per cu ft. They offer high moisture resistance. They will admit very small amounts of water vapor. But when water itself reaches the surface, it stays there. They have been used in bodies without additional support structure, with the insulation supporting the inner lining and even the floor. In general, this type of material is fire resistant, rather than fireproof. It may burn, but only when it is exposed to a flame.

Because of the different characteristics of various types of insulation, the general trend is to combine them in the same body to get the most advantages. In one of the newest ice cream trailers, glass fiber insulation is used between frame supports and in the ceiling with foam plastic along the walls and floor. All insulation is enclosed in a vapor barrier.

Which Floor?

Choosing a floor calls for attention to four points. It should be waterproof, strong enough to support the load, provide air circulation under the cargo, and be light.

A watertight floor is essential. If it leaks, the water can add deadweight and ruin the sub-floor insulation. Joints, ends and sides should be sealed. There should be a drain system, preferably insulated to prevent heat leakage.

Channels for air circulation will vary in height and width and affect the importance of the strength factor. If you use a lift truck for loading cargo, this will have to be allowed for in determining the strength of floor you'll need.

There are two basic floor designs. A floating floor rests on a layer of hard insulation supported by the body's frame. An anchored floor rests on wood sills placed on the body's cross pieces, with insulation between the sills. The anchor design adds strength to the body, but requires a stronger floor material to act as a bridge between the sills.

Like the outer shell, inner walls should have no fasteners extending from inside to outside. Common materials are treated plywood, metal, plastic, or plastic or metal on plywood. Some walls have channels or corrugations for air circulation around the cargo. This is useful design for a body in which cubic capacity is at a premium.

Metal Walls

Metal walls are frequently used with moist cargo but should not be used in a meat body because of the discoloration problem. Meat poses a rack securing problem. ●

Warehouse Directory

Listed below are the more than 300 public warehouses whose services are advertised in this issue of DISTRIBUTION AGE. The listing is alphabetical by city and state. Included are general merchandise warehouses, refrigerated warehouses, and household goods warehouses. Also listed are certain warehouse sales organizations.

Additional information on the services and facilities of particular warehouses shown in the listing can be obtained by turning to the advertisements on the following pages. Generally the advertisements appear in the same geographical, alphabetical sequence as the listings below. Still more information can be had by writing directly to the warehouse.

ALABAMA
Birmingham
American Tfr. & Whse. Co., Inc.
Doc's Tfr. & Warehouse, Inc.
Harris Warehouse Co.
Strickland Tfr. & Whse. Co.
Dothan
Security Bonded Whse.

ARIZONA
Phoenix
B-Z-Bee Transp'n. & Whse. Co.
Lightning Mvg. & Whse.

ARKANSAS
Little Rock
Terminal Warehouse Co.

CALIFORNIA
Los Angeles
Bekins Warehousing Corp.
California Warehouse Co.
Central Term. Whse. Co.
Davies Warehouse Co.
Lyon Van & Storage Co.
Overland Term. Warehouse Co.
Pacific Coast Term. Whse. Co.
Pacific Commercial Whse., Inc.
Star Truck & Whse. Co.
Union Terminal Warehouse
Oakland
Howard Terminal
San Diego
Lyon Van & Storage Co.
San Francisco
San Francisco Whse. Co.

COLORADO
Colorado Springs
Welcker Tfr. & Stge. Co.
Denver
Larsen Tfr. & Stge. Co.
North Denver Tfr. & Stge.
Welcker Tfr. & Stge. Co.
Pueblo
Burch Whse. & Tfr. Co., Inc.
Welcker Tfr. & Stge. Co.

CONNECTICUT
Danbury
Shepard's Warehouse
Hartford
George E. Dewey & Co.
Hartford Despatch & Whse. Co., Inc.
New Haven
Atlantic Bonded Whse. Corp.
Smedley Company

DELAWARE
Dover
Delmarva Whses., Inc.

DISTRICT OF COLUMBIA
Washington
Commercial Storage Co.
Davidson Tfr. & Storage Co.
Kane Warehouse Company
Terminal Stge. Co. of Wash.

FLORIDA
Jacksonville
Jacksonville Warehouse Co.
Laney & Duke Stge. Whse. Co., Inc.
M & M Term'l. Whse. Company
Peninsular Whse. Company
Union Terminal Whse. Co.
Miami
Colonial Warehouse, Inc.
International Bonded Whse. Corp.
Santini Bros., Inc.

Tampa
Caldwell Bonded Whses.

GEORGIA
Atlanta
American Bonded Whse.
Coweta Bonded Warehouse
Savannah
Savannah Bonded Whse. & Tfr. Co.

HAWAII
Honolulu
City Transfer Co., Ltd.
H C & D Mvg. & Stge.

ILLINOIS
Chicago
Hudson Warehouses
Chicago
Affiliated Whse. Companies
American Chain of Whses., Inc.
Anchor Storage Co.
Associated Warehouses, Inc.
Crooks Terminal Whses., Inc.
Currier-Lee Whses., Inc.
Equipment Storage Corp.
Griswold & Bateman Whse. Co.
Grove Storage Co., Inc.
Joyce Bros. Stge. & Van Co.
Majestic Whses., Inc.
Midland Warehouses, Inc.
North Pier Terminal
Packers Term'l. & Whse. Corp.
Producers Warehouse Co.
Riverside Warehouse
Soo Terminal Whse.
Sykes Terminal Whse. Co.
Thomson Terminals, Inc.
Wakem & McLaughlin, Inc.
Western Warehousing Co.

East St. Louis
McMahon Transfer & Whse. Co.
Mid-America Term'l. Whse., Inc.
Mississippi Avenue Whse.

Joliet
Joliet Whse. & Tfr. Co.
Kankakee
Belt Route Whse. Stge. Co.
Peoria
United Facilities, Inc.
Vandalia
Vandalia Whse. Corp.

INDIANA
Elkhart
Schult General Warehouse
Evansville
Ingle Street Whse. Co.
Mead Johnson Terminal Corp.
Producer's, Inc.
Terminal Whse., Inc.
Fort Wayne
Edgar's Warehouses
Fort Wayne Storage Co., Inc.
Pettit Whses., Inc.

Hammond
Great Lakes Whse. Corp.
Illiana Storage Co., Inc.
Nowak Warehouses, Inc.
Indianapolis
Indiana Term'l & Refrig. Co.
Indianapolis Whse. & Stge. Co., Inc.
Merchandise Whse. Co., Inc.
Strohm Whse. & Cartage Co.

Muncie
Oren-Shively Whses.

IOWA
Cedar Rapids
American Tfr. & Stge. Co.
Cedar Rapids Tfr. & Stge. Co.

Davenport
Roederer Transfer & Storage Co.
Dubuque
Dubuque Stge. & Tfr. Co.

KANSAS
Kansas City
G-K Warehouses, Inc.
Transit Whses., Inc.

Wichita
United Warehouse Company
Yellow Van Moving & Stge. Co.

KENTUCKY
Louisville
Louisville Public Whse. Co.
Winchester
Winn Avenue Whses., Inc.

LOUISIANA
New Orleans
H. G. Bauer Mvg. & Stge. Inc.
Commercial Term'l Whse., Inc.
Gulf Shipside Storage Corp.
Hayes Drayage & Storage, Inc.
Jackson Warehouses, Inc.
Maloney Tking. & Storage, Inc.
Standard Warehouse Co., Inc.
Shreveport
Herrin Tfr. & Whse. Co., Inc.

MAINE
Bangor
Galt Block Warehouse Co.

MARYLAND
Baltimore
Camden Warehouses
Davidson Transfer & Stge. Co.
Rowley Whsing. & Distributing, Inc.
Western Maryland Whse. Co.

MASSACHUSETTS
Boston
Charles River Stores operated by Merchants Whse. Co.
Commodity Warehouse Corp.
Hoosac Storage & Whse. Co.
National Dock & Stge. Whse. Co.
Standard Storage Co.
Wiggin Terminals, Inc.

Lowell
Curran-Morton of Lowell, Inc.
Springfield
Pioneer Valley Refrig. Whse., Inc.

MICHIGAN
Detroit
Central Detroit Whse. Co.
Detroit Harbor Term'l's, Inc.
Edgar's Warehouses
Fleetwing Terminal Corp.
Grand Trunk Whse. & C. S. Co.
John F. Ivory Storage Co., Inc.
Jefferson Terminal Whse.
Lakeshore Warehouse Inc.
United States Cold Stge. Corp.
Saginaw
Central Warehouse Co.

MINNESOTA
Minneapolis
Minneapolis Terminal Whse. Co.
Security Warehouse Co.

St. Paul
Central Warehouse Co.
St. Paul Term'l Whse. Co.

MISSOURI
Joplin
Sunflower Tfr. & Stge. Co.
Kansas City
Adams Tfr. & Storage Co.
Belger Warehouse Co.
Central Storage Co.
Crooks Terminal Whses., Inc.
Evans Whse. Service
G-K Whses. Inc.
Jacobs Warehouse Co., Inc.
Kansas City Term'l Whse. Co.
Midwest Terminal Whse. Co.

St. Louis
Keystone Warehousing Co.
S. N. Long Warehouse
Madison St. Term'l. Whse. Corp.
Rutger St. Whse., Inc.
St. Louis Terminal Whse. Co.
Tyler Whse. & Cold Stge. Co.
Warehousing Corp. of Mo., Inc.

Springfield
General Warehouse Corp.
NEBRASKA
Lincoln
Sullivan Tfr. & Stge. Co.

Omaha
Ford Stge. & Mvg. Co.
Gordon Stge. Whses., Inc.
Omaha Central Whse. Co.

NEW HAMPSHIRE
Manchester
McLane & Taylor Corp.

NEW JERSEY
Atlantic City
Atlantic Moving & Storage Co.

Bayonne
Lehigh Tank Terminal
Camden
Camden Marine Terminals
Eavenson & Levering
Elizabeth
Wheeling Transportation, Inc.
Jersey City
Cooke Warehouse Corp., J. Leo
Lackawanna Whse. Co., Inc.
Wheeling Transportation, Inc.

Newark
Federal Stge. Whses.
Lehigh Whse. & Trans. Co.
Port Newark
Lehigh Term. & Whse. Co.
Wheeling Transportation, Inc.

Trenton
Anchor Warehouse Co.
Delaware Valley Whse. Co.

NEW YORK
Brooklyn
Dock Whsing. & Bottling
Center, Inc.
Empire State Whses. Co.
Buffalo
American Household Stge. Co.
Buffalo Merchandise Whses., Inc.
Keystone Warehouse Co.

Knowlton Warehouse, Inc.
Geo. Laub's Sons
Lederer Terminals
Wilson Warehouse, Inc.
Deer Park, L. I.
Pinter Warehouse, Inc.
Dunkirk
Tidewater-Cleveland Stge.
Corp.
Horseheads
Lehigh-Horseheads Whse.
Corp.
New York City
Affiliated Whse. Companies
American Chain of Whses., Inc.
Associated Warehouses, Inc.
Bowling Green Stge. & Van Co.
Chelsea Fireproof Stge. Whses.
Santini Brothers, Inc.
West Side Whses., Inc.
Richmond Hill, L. I.
Kew Gardens Stge. Whse., Inc.
Rochester
Geo. M. Clancy Carting Co.,
Inc.
Syracuse
Great Northern Whses., Inc.
King Storage Whse., Inc.
Paul-Jeffrey Company
White Plains
J. H. Evans & Sons, Inc.
NORTH CAROLINA
Charlotte
American Stge. & Whse. Co.,
Inc.
Dixie Cartage & Whsing. Co.
Raleigh
Carolina Stge. & Dist. Co.
Raleigh Bonded Whse., Inc.
NORTH DAKOTA
Fargo
Union Storage & Tfr. Co.
OHIO
Akron
Cotter Merchandise Stge. Co.
Canton
Canton Storage, Inc.
Cincinnati
Cincinnati Term. Whses., Inc.
Cleveland
Assembly Distribution Service,
Inc.

Conaty Warehouse Co.
Lederer Terminals
National Terminals Corp.
Railway Warehouses
Columbus
Central Ohio Warehouse Co.
Columbus Term. Whse. Co.
Merchandise Whse. Co.
Neilston Storage Co.
Ohio Warehouses, Inc.
Dayton
Dayton Warehouses, Inc.
Union Storage Co.
Toledo
Edgar's Warehouses
Great Lakes Term. Whse. Co.
Merchants & Mfrs. Whse. Co.
Toledo Terminal Whse., Inc.
Youngstown
Lederer Terminals

OKLAHOMA
Oklahoma City
General Warehouse Corp.
O. K. Tfr. & Stge. Co.
Tulsa
General Warehouse Corp.

OREGON
Portland
Holman Transfer Co.
Oregon Transfer Co.
Rapid Transfer & Stge. Co.
Rudie Wilhelm Whse. Co.

PENNSYLVANIA
Allentown
Hummel Warehouse Co., Inc.
Butler
Nicholas Tfr. & Stge. Co.
Erie
Erie Warehouse Co.
M. V. Irwin Moving & Stge.
Harrisburg
Central Storage & Transfer Co.
Harrisburg Storage Co.
Harrisburg Warehouse Div.,
Western Whsing. Co.
Lancaster
Lancaster Storage Co.
Philadelphia
Commercial Warehousing Co.
Melville Warehouse Co.

Merchants Whse. Co.
Pennsylvania Whsing. & Safe
Deposit Co.
Terminal Warehouse Co.
Pittsburgh
Beacon Warehouse, Inc.
White Terminal Co.
Scranton
Mifflin Warehouse Co.
Quackenbush Warehouse Co.

SOUTH CAROLINA
Charleston
Berkeley Storage Co.
Charleston Whse. & Fwdg.
Corp.
Columbia
Carolina Bonded Stge. Co.

TENNESSEE
Chattanooga
Chattanooga Whse. & C.S. Co.
Cherokee Whses., Inc.
Memphis
Mayer Whse. & Term. Inc.
Midwest Terminal Whse. Co.
Poston Warehouses, Inc.
Vaiden Warehouse
Nashville
Bond, Chadwell Co.
Central Van & Stge. Co.

TEXAS
Corpus Christi
Crocker Transfer & Stge. Co.,
Inc.
Dallas
Dallas Transfer & Term. Whse.
Co.
El Paso
El Paso Term. Whses., Inc.
Western Warehouses
Fort Worth
Binyon O'Keefe Stge. Co.
Johnson Stge. & Van Co.
United States Cold Stge. Corp.
Houston
American Warehouses, Inc.
Houston Central Whse. & C.S.
Co.
Houston Term. Whse. & C.S.
Co.
Houston Warehouse Service,
Inc.
Patrick Tfr. & Stge. Co.

T.P.C. Stge. & Tfr. Co., Inc.
Texas Service Whse. Co.
Union Transfer & Stge. Co.
Universal Term. Whse. Co.
Wald Term. Whse. Co., Inc.

UTAH
Salt Lake City
Noyce Transfer Co.
Redman Van & Storage Co.

VIRGINIA
Norfolk
Security Storage & Van Co.
Southgate Storage Co., Inc.

WASHINGTON
Seattle
National Transfer, Inc.
Seattle Transfer Co.
Taylor-Edwards Whse. & Tfr.
Co., Inc.
Spokane
Riverside Warehouses, Inc.
Taylor-Edwards Whse. & Tfr.
Co., Inc.

WEST VIRGINIA
Dunbar
Guaranty Storage Co.
Huntington
Service Warehouse Corp.
WISCONSIN
Eau Claire
Superior Transit Stge. Corp.
Green Bay
Leicht Tfr. & Stge. Co.
Madison
Hansen Stge. of Madison, Inc.
Milwaukee
American Warehouse Co.
Hansen Storage Co.
National Warehouse Corp.
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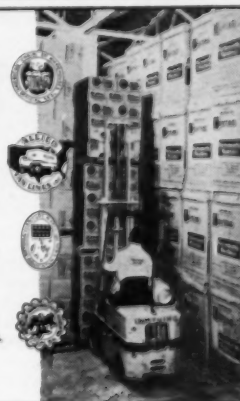
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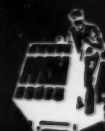
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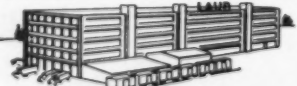
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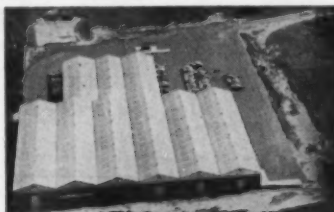
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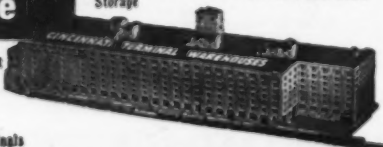
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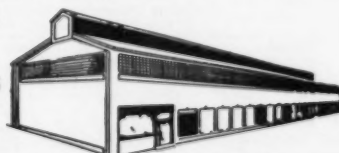
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Complete local and over-the-road truck services
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Deep Water Dock, Private Siding
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... Bulk Handling

(Continued from Page 45)

pneumatic conveying line of steel tubing. Sugar is picked up from the trailer by vacuum and is subsequently transferred to a pressure air stream in order to be distributed to a multiplicity of bins.

The mis-weighing of an ingredient, the incomplete discharge of a hopper, or the failure of a conveyor to deliver the proper quantity can ruin a finished product.

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The three ingredients enter a blending mixer which discharges and receives material as called for. An error at any time during weighing or proportioning cycles would result in waste. An automatic "fail-safe" system uses timer alarms which actuate a series of lights and bells. At the same time the system automatically shuts off. ●

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Spector Gets PR Award



W. Stanhaus (left), president of Spector Freight System, Inc., accepts the Great Dane Trailer-ATA Foundation award for public relations. Plaque and a check for \$1000 were presented by Victor L. Johnson, Jr., sales manager of Great Dane Trailers. Spector was honored for its "Life's Wonderful Club" program

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EXPORT MANAGERS . .
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Assignments will include articles on packaging techniques, preparation of booklets on selected shipping problems, and semi-annual talks to sales staff on fundamental problems connected with large variety of industrial products being shipped via air, rail, highway and water transportation. Write Box 244, DISTRIBUTION AGE, Chestnut & 56th Sts., Philadelphia 39, Pa.

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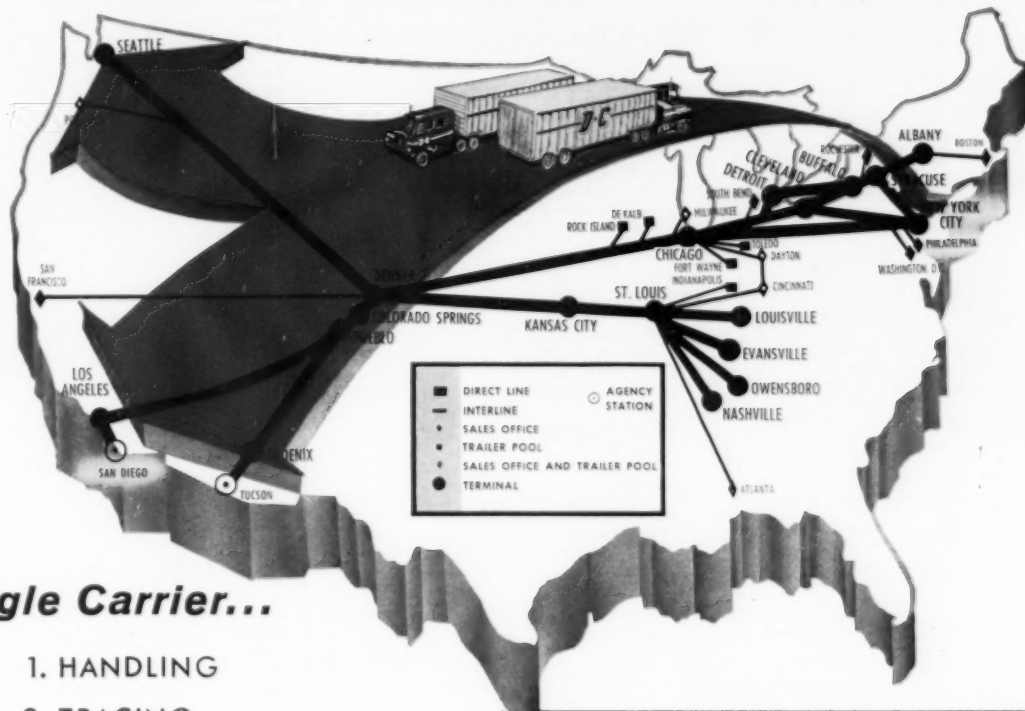
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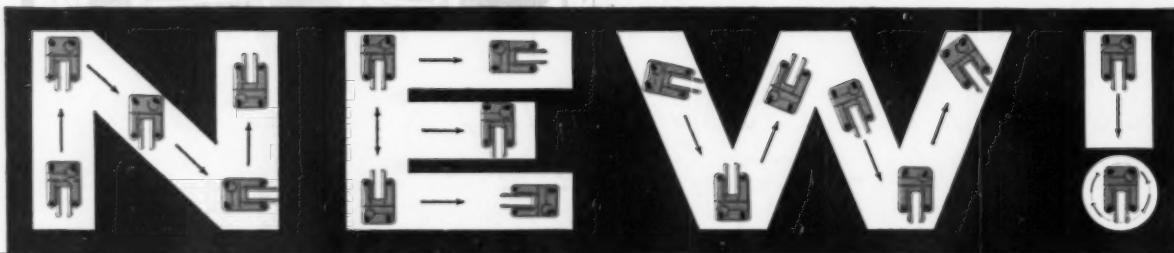
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